EAISSNA – An Electronic Atlas of Ichthyoplankton on the Scotian Shelf of North America

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ABSTRACT

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The EAISSNA database contains information on location and time of spawning, and abundance and distribution of eggs and larvae of marine fish on the Scotian Shelf of North America. 197 scientific publications from 1919 to 2001 were reviewed and original analysis conducted on datasets from Department of Fisheries and Oceans (DFO) Scotian Shelf Ichthyoplankton Program (SSIP) and Fisheries Ecology Program (FEP) for 1976-82 from data archives, providing information on 107 taxa of fish and invertebrates. The database is intended for use in environmental assessment and management activities associated with offshore hydrocarbon development and production and ocean management. Supporting maps and database tables, and possible enhancements and developments including standards based on World Wide Web (WWW) access are also described. The database was developed for and with funding from the Canadian Environmental Studies Research Funds (ESRF), an industry-government body that promotes research in support of hydrocarbon development of Canada's frontier lands. Compact Disks (CD) (report, lists, maps and data) can be obtained from the authors.

RÉSUMÉ

Stewart, P.L., R.M Branton, G.A. Black, H.A. Levy and T.L. Robinson. 2003. EAISSNA – An Electronic Atlas of Ichthyoplankton on the Scotian Shelf of North America. Can. Tech. Rep. Fish. Aquat. Sci. 2514: vii + 179 pp.

La base de données EAISSNA contient de l'information sur le lieu et la période de fraye ainsi que sur l'abondance et la distribution des oeufs et larves des poissons de mer sur le plateau néo-écossais, en Amérique du Nord. On a examiné 197 publications scientifiques de 1919 à 2001 et procédé à des premières analyses d'ensembles de données provenant des archives de 1976 à 1982 du Programme d'étude de l'ichtyoplancton du plateau néo-écossais (SSIP) et du Programme d'écologie des pêches (PEP) du ministère des Pêches et des Océans (MPO). Cela a permis d'obtenir de l'information sur 107 taxons de poissons et d'invertébrés. La base de données est destinée à servir aux activités d'évaluation environnementale et de gestion associées à la mise en valeur et à la production d'hydrocarbures extracôtiers ainsi qu'à la gestion des océans. On trouvera ici également une description des cartes et tableaux connexes ainsi que des améliorations et possibilités de développement auxquelles se prête la base de données, y compris l'élaboration de normes fondées sur l'accès au World Wide Web (WWW). La base de données à été conçue à l'intention et grâce au financement du Fonds [canadien] pour l'étude de l'environnement (FÉE), qui a été établi par l'industrie et le gouvernement pour promouvoir la recherche à l'appui de la mise en valeur des hydrocarbures dans les terres domaniales du Canada. On peut se procurer les disques compacts (contenant le rapport, les listes, les cartes et les données) auprès des auteurs.

1.0 INTRODUCTION

The Electronic Atlas of Ichthyoplankton on the Scotian Shelf of North America (EAISSNA) is a database of knowledge and information on ichthyoplankton (fish eggs and larvae), specifically developed for use in environmental assessment and management activities associated with offshore hydrocarbon development and production. The core of EAISSNA is a Microsoft (MS) Access database of information derived from scientific publications and from the Department of Fisheries and Oceans (DFO) Scotian Shelf Ichthyoplankton Program (SSIP) and Fisheries Ecology Program (FEP) data archives. The EAISSNA database contains a bibliography, species list, gazetteer, summary distribution data, and maps. Maps are provided as both Portable Network Graphic (PNG) images and MapInfo Map Interchange Format (MIF) polygons. The latter is intended to make the EIASSNA system compatible with Geographic Information Systems (GIS). In combining these features, the Atlas makes ichthyoplankton information more accessible for use in a variety of contexts, in particular to support environmental assessment and management of the Eastern Canadian offshore in relation to hydrocarbon development and production activities, and to document changes in distribution with time.

This report describes the EAISSNA database and provides a suite of basic data products that can be derived from it. Sections of the report include: *Background* – an overview of information and methods used to construct the database; *Technical Details* – a description of database structure and examples of how to use it; and *Conclusions* - discussion and recommendations for further development. Results of an original analysis of seasonality of ichthyoplankton as part of the project, using the EAISSNA database, are presented in the Appendices D-F. The EAISSNA database is available on two compact discs (CD) and may be obtained from the authors. Database users are expected to be familiar at a basic level with database management software, in particular Microsoft Access and/or Structured Query Language (SQL).

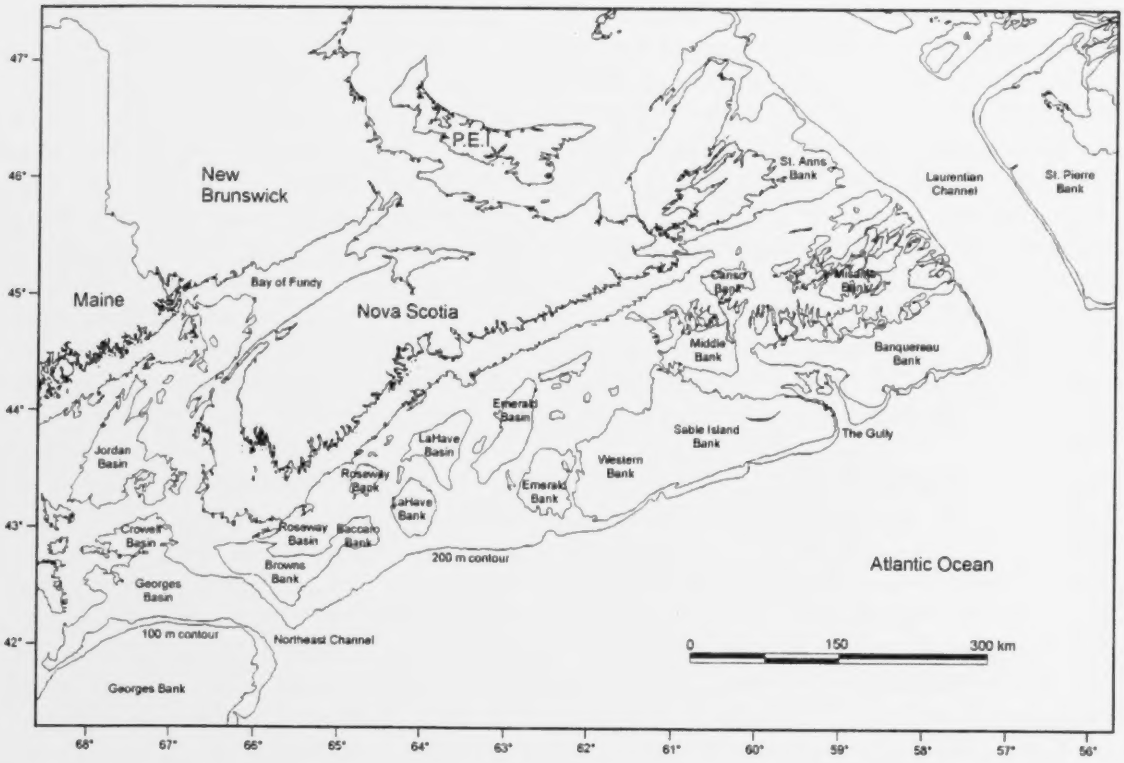
2.0 ICHTHYOPLANKTON ON THE SCOTIAN SHELF

2.1 Importance of Ichthyoplankton

Fish and invertebrates use the seabed and water column to support all life stages and are important for the varied roles they play in the ecosystem and for their commercial value. Comprehensive knowledge of fish and invertebrates is key to assessing the environmental impacts of human activities in the offshore. Knowledge of fish eggs and larvae —collectively known as ichthyoplankton — is a particularly important element in understanding the life cycle of fish. This knowledge can be used to determine: spawning areas and timing (Neilson and Perley 1996); estimates of biodiversity (Shackell and Frank 2000); changes in species' status (Harris and Stephenson 1999; Stephenson *et al.* 1990); and impacts of human activity (e.g. oil spills) (Spaulding *et al.* 1983; Hurlbut *et al.* 1991).

Information on ichthyoplankton distribution and seasonality encountered in the literature and which was entered in the EAISSNA database included information on 107 taxa (98 species or genera and 9 identified to the family level) for the Scotian Shelf, Bay of Fundy and Gulf of

Maine[1] (Figure 1; Table 1). Additional species occur outside the study area including to the south along the United States Northeast Atlantic Continental Shelf including Georges Bank and some uniquely occurring in other areas (e.g. Newfoundland waters).


47°
46°
45°
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43°
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67°
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64°
63°
62°
61°
60°
59°
58°
57°
56°
New Brunswick
P.E.I.
Maine
Bay of Fundy
Nova Scotia
St. Anns Bank
Laurentian Channel
St. Pierre Bank
Canso Bank
Misaine Bank
Middle Bank
Banquereau Bank
Emerald Basin
LaHave Basin
Sable Island Bank
The Gully
Jordan Basin
Roseway Bank
Western Bank
Emerald Bank
LaHave Bank
Crowell Basin
Roseway Basin
Baccaro Bank
Browns Bank
Georges Basin
200 m contour
Atlantic Ocean
100 m contour
Northeast Channel
Georges Bank
0
150
300 km

Figure 1. Scotian Shelf and adjacent areas covered by EAISSNA.

Timing and seasonality of spawning and occurrence of eggs and larvae determined from analysis of SSIP/FEP databases as part of this project generally agreed with literature and with summaries which have been prepared from the data in earlier works (Appendices D to F).

2.2 Information Sources

2.2.1 Scientific Publications

Publications for EAISSNA were identified through searches on public bibliographic databases (e.g. Aquatic Sciences and Fisheries Abstracts, Oceanic Abstracts, and DFO WAVES) and from reference lists provided by DFO science personnel and other researchers. Some authors were contacted to acquire additional information such as graphics and source documents.

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[1] Species total did not include Georges Bank, which would have included many more southerly species.

Major Studies

Most of the information on spawning activity and distributions of fish eggs and larvae in Canadian east coast continental shelf areas comes from a limited number of major studies carried out to better understand commercial fisheries. These include:

	Source	Period	Synopsis	Key References
1.	Canadian Fisheries Expedition	1914-15	Survey of fish eggs and larvae for commercial and non-commercial species in the Gulf of St. Lawrence, Scotian Shelf, and Newfoundland waters.	Dannevig 1919
2.	Soviet Union and Russia	1949-	Support for offshore fleets by national marine fishery institutes. USSR joined ICNAF in 1958. Contributions by Russian workers are ongoing.	Serebryakov 1962; 1965; Rikhter et al. 2001
3.	International Commission for the Northwest Atlantic Fisheries (ICNAF)	1949-77	Coordinated efforts of scientists from several countries. Focused on seasons and areas of abundance, migrations and composition of catch; lesser emphasis on early developmental stages of fish.	Marti 1963
4.	DFO Scotian Shelf Ichthyoplankton Program (SSIP)	1976-82	Dedicated surveys of distribution and timing of ichthyoplankton. Principal study of its type covering Scotian Shelf, extending to Georges Bank and Gulf of Maine. More than 30 cruises carried out (Figure 2).	Kohler et al. 1977; O'Boyle et al. 1984
5.	DFO Fisheries Ecology Program (FEP)	1983-86	Dedicated ichthyoplankton surveys to determine ecology of important commercial gadid fisheries (principally Browns Bank haddock) on SW Scotian Shelf. In conjunction with extensive physical oceanographic measurements (Figure 3).	Smith et al. 1989; Dickie & Smith 1989; Hanke et al. 2001a
6.	DFO Larval Herring Program (LHP)	1975-95	Annual surveys of larval herring covering SW Scotian Shelf and Georges Bank. Other species and stages used in analyses of ichthyoplankton distributions and dynamics.	Hanke et al. 2001b
7.	Marine Resources Monitoring, Assessment and Prediction Program (MARMAP)	1977-87	Dedicated ichthyoplankton surveys in parallel with SSIP & FEP from Cape Hatteras, North Carolina to Cape Sable, Nova Scotia. Although predominantly a USA initiative, Canadian, European and Soviet Union researchers were included in cruises, laboratory and data analysis.	Sherman 1980; Sherman et al. 1981; Sibunka and Silverman 1984; Morse et al. 1987; Sibunka and Silverman 1989; Berrien and Sibunka 1999
8.	Ocean Production Enhancement Network (OPEN)	1989-94	Study of processes affecting survival, growth and reproduction of fish and commercial invertebrates, particularly Atlantic cod and sea scallops on Scotian Shelf and in Newfoundland waters. Led to several studies involving sampling of fish eggs and larvae on the Scotian Shelf.	Miller et al. 1995; Frank et al. 1994; Fortier & Villeneuve 1996; McLaren & Avendano 1995; Ruzzante et al. 1996
9.	Global Ocean Ecosystem Dynamics (GLOBEC)	1991-95	Dynamics of retention of larval fish and zooplankton on Western Bank.	McLaren et al. 1997; Reiss et al. 2002

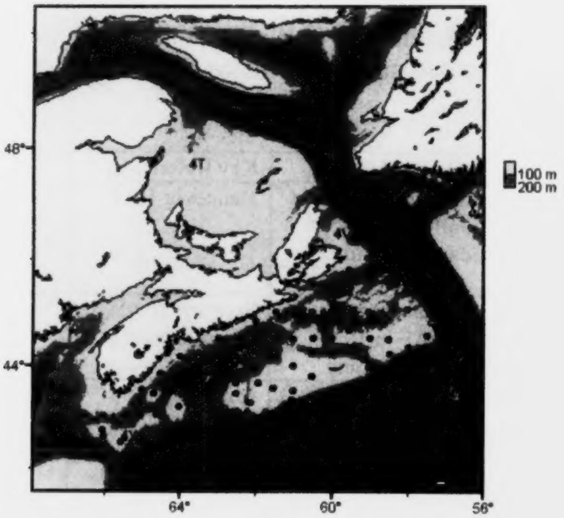

Figure 2. General area sampled in the Scotian Shelf Ichthyoplankton Program (SSIP).

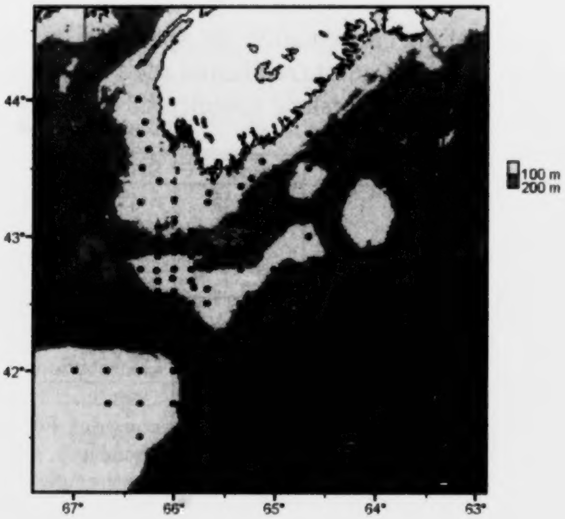

Figure 3. Stations from the Fisheries Ecology Program (FEP).

Other Sources

Some of the information about ichthyoplankton was obtained from organizational sources such as:

	Source	Period	Synopsis	Key References
1.	DFO Maritimes, Marine Fish Division (MFD)	1977-	Spawning condition, distribution and timing of reproduction from observations on juvenile and adult fish.	Scott 1983; Colton and Temple 1961; Colton *et al.* 1979; Rikhter *et al.* 2001
2.	DFO Maritimes, Invertebrate Fisheries Division (IFD)	1986-95	Dynamics of important commercial species such as sea scallop and American lobster off SW Nova Scotia and Georges Bank. SSIP data also used in determining timing and spawning distributions of decapod crustaceans.	Tremblay and Sinclair 1986; 1990; 1992; Stasko and Gordon 1983; Watson and Miller 1991; Harding et al. 1987; 1995; Roff et al. 1986.
3.	DFO Maritimes, Oceans Branch	2002	Overview of ecosystem of Scotian Shelf for ocean management purposes. Provides a summary of many of the initiatives as well as information on timing and seasonality of ichthyoplankton.	Breeze et al. 2002
4.	Offshore Petroleum Industy, Impact	1981-	Ichthyoplankton distribution and seasonality data from literature and baseline surveys used to assess impacts	Mobil Oil Canada 1983; 1985; SOEP 1996; Davis et al. 1998; Bonnyman 1981.

	Source	Period	Synopsis	Key References
	Assessments		of offshore activities. In environmental impact statements for Hibernia, Venture and Sable Offshore Energy developments.	
5.	Traditional Ecological Knowledge (TEK)		The location of historic spawning areas in the Bay of Fundy have been documented from consultations with local fishers.	Graham et al. 2002

Other types of studies generating information on ichthyoplankton distributions include: population and recruitment estimations (e.g. Berrien 1983); studies of physical processes related to distribution and dynamics (Tremblay and Sinclair 1990; Smith and Morse 1985; Lough *et al.* 1994; Lochman *et al.* 1997); and determinations of larval diversity (Shackell and Frank 2000).

2.2.2 DFO Data Archives

Canada's Department of Fisheries and Oceans (DFO) maintains ichthyoplankton information in electronic databases from major survey programs (i.e. SSIP, FEP, LHP), research survey cruises, and occasionally information from international databases such as MARMAP on a project-specific basis. The majority of the data relative to ichthyoplankton eventually resides in an Oracle database environment at the Bedford Institute of Oceanography, where it is managed and coordinated by the Marine Fish Division, Virtual Data Centre (VDC) (Branton *et al*, 2001). The VDC provides an interface to data users and analysis tools, in particular ACON (A CONtouring Application), which includes an embedded programming language and intrinsic functions supporting fisheries data visualization, mapping and assessment (Black 2002; Black and Mohn 1993). A specialized ACON program was developed to produce summary maps of SSIP/FEP data for direct inclusion in the EAISSNA database. Knowledge and experience of DFO personnel with marine scientific databases further enhanced our ability to recover useful information from these data.

The Atlantic Coastal Zone Information Steering Committee (AZISC) Atlantic Coastal Database Directory (http://www.dal.ca/aczisc/acdd) provides the following descriptive information (metadata) for the SSIP database.

INDEX ID: 556 TITLE: Scotian Shelf Ichthyoplankton Program Database (SSIP)

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DESCRIPTION/PURPOSE/KEYWORDS:
A collection of ichthyoplankton, hydrographic, and water chemistry observations taken from the Scotian Shelf during the period 1976 to 1982. Includes species identification and enumeration of ichthyoplankton collected from several tow types using a variety of plankton nets. Qualitative estimates of major zooplankton taxa usually available. Hydrographic data usually collected and chlorophyll and water chemistry samples collected in specific cases. Detailed information is available on request. Used to discriminate the seasonal and geographical distributions of eggs and larvae of fish stocks on the Scotian Shelf; to estimate fish larval growth and mortality rates and how these change with developmental stage, season and area; and to collect a wide spectrum of both physical and biological oceanographic parameters upon which to construct predictive stock-recruitment models.

Keywords: BIOLOGY, ECOLOGY, HYDROGRAPHY, ICHTHYOPLANKTON, OCEANOGRAPHY

FEES/ACCESS/RESTRICTIONS:
Fees: No formal pricing policy exists; costs are negotiated on a case by case basis.
Access: Access through contact person. All requests to be approved by Science Director in consultation with line management.

FORMATS/SIZE/STRUCTURE:
Size: 15 MB; 150,000 records
Other Size: Approximately 15000 ichthyoplankton tows from approximately 4500 stations covered on 37 coverages; 7 record types; 10 to 30 attributes per record depending on type.

TIME COVERAGE:
Period of Record: 1976 to 1982; at least one observation for all areas for each month of the year (e.g., at least 1 February observation for entire 7 year history of the program). Coverage is incomplete. Survey vessel was not available to achieve total coverage as originally planned. Coverage is not uniform. Some areas were visited more than once depending on availability of survey vessel.
Period of Compilation:

Update Frequency: No updates - dataset completed
Date of Last Scientific Update: 1982
Date of Last Revision to Database: 1982

SOURCES OF THE DATA/QUALITY/ACCURACY:
Sources: Field measurements - ichthyoplankton, hydrography, water chemistry.
Quality: Data undergoes computerized edit and audit. Variable circumstances re data collection depending on observation type; details available from contact persons.
Accuracy: Absolute Horizontal: +/- .01 minute; Vertical: +/- 1.0 m

LINKAGES TO OTHER DATA/INFORMATION:
Early Life History Database - Fisheries Ecology Program; Bottle Sampling and Canadian BT - Marine Environmental Data Service

DOCUMENTATION / REFERENCES / TUTORIAL:
Reference: Working papers - Type: Data description; Format: Hard-copy; Language: English
Reference: Online data dictionary - Type: Dictionary; Format: Hard-copy; Language: English

COMMENTS:
SSIP Data Analysis-Related Publication list available in digital format.

METADATA REVISION DATE: 1998/06/01

Unpublished technical documents for the SSIP database (e.g. data dictionary) were obtained from the DFO contacts.

2.3 Information Content

This section of the report provides general descriptions of the major types of information and how they were prepared for inclusion into the EAISSNA database.

2.3.1 Species Names

All scientific names used in the EAISSNA database were verified against the Integrated Taxonomic Information System (ITIS) http://www.itis.usda.gov/ , a leading online source for authoritative taxonomic information on the plants, animals, fungi, and microbes of North America and the world. ITIS is a partnership of U.S., Canadian, and Mexican agencies (ITIS-North America); other organizations; and taxonomic specialists. ITIS is also a partner of Species 2000 (Fishbase) and the Global Biodiversity Information Facility (GBIF). The EAISSNA species list includes Internet links to all of these sources.

Information on ichthyoplankton is provided by individual species or species group (e.g. the eggs of the cod/haddock/witch group that cannot be separated below certain sizes). Although some studies provide breakdowns of eggs and larvae by size, the EAISSNA database contains total numbers only. A number of genera are difficult to distinguish to species at the egg and larval stages (e.g. sand lance *Ammodytes* spp, redfish *Sebastes* spp.). Typically these are presented in studies at the genus level only and that is how they appear in EAISSNA.

2.3.2 Spatial Considerations

The primary area of interest for this project is the Scotian Shelf and adjacent areas, particularly the Bay of Fundy, Gulf of Maine and Georges Bank. Information is often summarized in terms of defined regions or areas (e.g. spawning times for Georges Bank, Scotian Shelf, and other areas; egg density on an individual spawning bed etc). Descriptions can include estimates of abundance (density per unit area or per sampling unit); population (total number of organisms in the specified area); and productivity (spawning intensity, number of eggs produced for the region or per unit area). Some specific studies of dynamics of fish eggs and larvae generate localized (in space and time) information on ichthyoplankton abundance and distribution. Such point data is included in the present study where available.

Named Locations and Features

The offshore environment of the Scotian Shelf, Bay of Fundy and adjacent waters, is subdivided into many locations typically based on physiographic features (e.g. banks and basins, shelves, channels and troughs etc.) (for example see Davis and Browne 1997). Although very small features such as spawning beds (e.g. herring) may be referred to in terms of fixed coordinates, larger features require a more sophisticated treatment. These features, in the form of digital polygons, are one of the main ways to find information in the EAISSNA database.

A list of seabed features was compiled from various sources (Templeman 1966; King 1970; McLean and King 1971; McLean *et al.* 1977; Loring and Nota 1973; Kranck 1971; Fader *et al.* 1982; Fader *et al.* 1977; Davis and Browne 1997). Although typically, features are designated based on a characteristic depth contour. The designation of a seabed feature such as a bank or basin is often arbitrary (e.g. the distinction between Sable and Western Banks and the boundary between them) and there is no standard reference gazetteer of features and their geographic extents for the Scotian Shelf. Generally, where no specified boundary occurred, we have considered banks to be shallow features above the 100 m contour and basins below 100 m in an area where a definite depression occurs. From the perspective of the EAISSNA, the need for fixing a georeferenced area to aid in searching the database was more important than an absolute definition. Several broader features (e.g. the Scotian Shelf as a whole) were also digitized so that searches of areas outside recognized features were also supported.

All of the features used in the database were either digitized from scanned images of the published material; scanned bathymetric contours from surficial geology maps (e.g. King 1970; Loring and Nota 1973)(e.g. German Bank); or digital bathymetric contours from a composite map produced by Natural Resources Canada from Canadian Hydrographic Services charts (Oakey1999). If the feature was digitized from a scanned image, a PNG version of the scanned image was included in the EAISSNA database.

The on-line Alexandria Digital Library (ADL)[2] was consulted to determine if features from our study had been referenced. The ADL included a relatively small percentage of features from Eastern Canada and the US continental shelf and does not include polygons. Information from the ADL concerning individual geographic features (e.g. approximate coordinates, catalog number, type of feature) is however included in our database where available.

Maps

Several map types were incorporated into the database, both for quick reference to existing displays of abundance and distribution, and, when converted into a GIS compatible format, to allow computer-aided searches and analysis. Types include:

Scaled Symbols — Sample values are displayed as symbols (e.g. circles, triangles, squares etc.) mapped at observed locations and sized proportional to the parameter being displayed. Scaled symbols are common for older data (Figure 4) and a standard output on most GIS systems (Figure 5) but cannot be readily converted to GIS or tabular form.

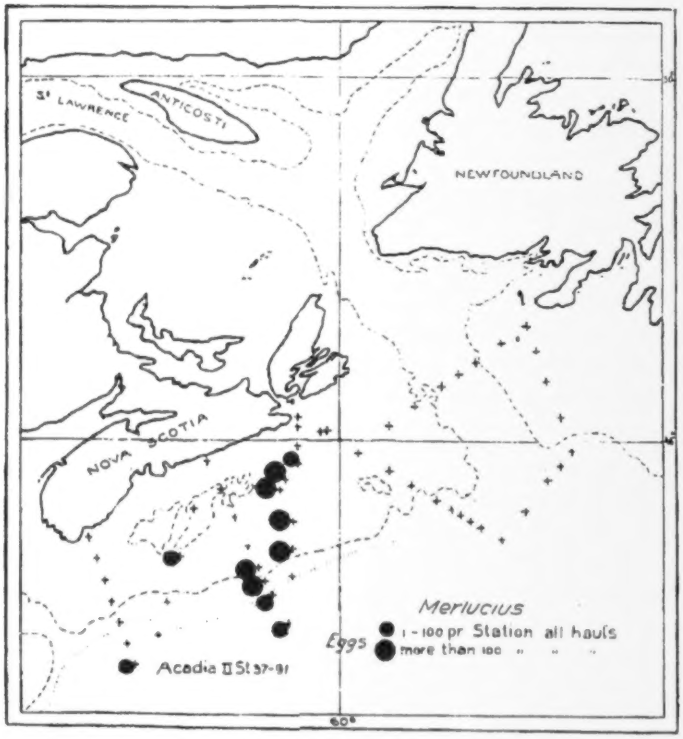

Figure 4. Example of an early scaled symbol plot (Dannevig 1919).

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[2] http://www.alexandria.ucsb.edu

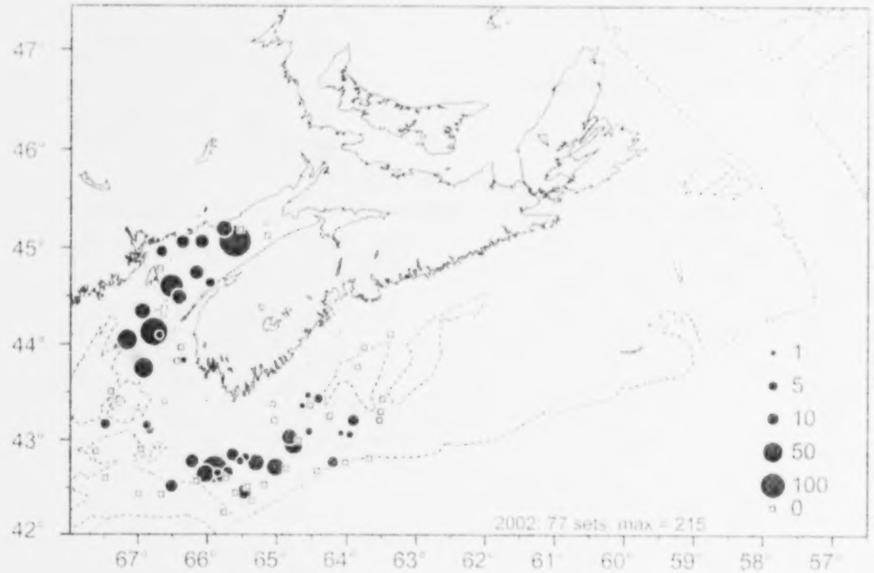
47°
46°
45°
44°
43°
42°
67°
66°
65°
64°
63°
62°
61°
60°
59°
58°
57°
1
5
10
50
100
0
2002: 77 sets max = 215

Figure 5. Example of a scaled symbol plot produced by the VDC, ACON software.

Polygons — A polygon is a closed figure made by joining line segments, where each line segment intersects exactly two others; or an area bounded by a closed loop of straight-line segments (Aronoff 1991). Locations of activities (e.g. spawning) or geographic features (e.g. Sable Island Bank, Scotian Shelf) are displayed as polygons on a map. (Figure 6). Polygons are standard output on most GIS systems (Figure 5) and are readily converted to a form that can be stored in a database. These are also referred to as "area maps" in the database.

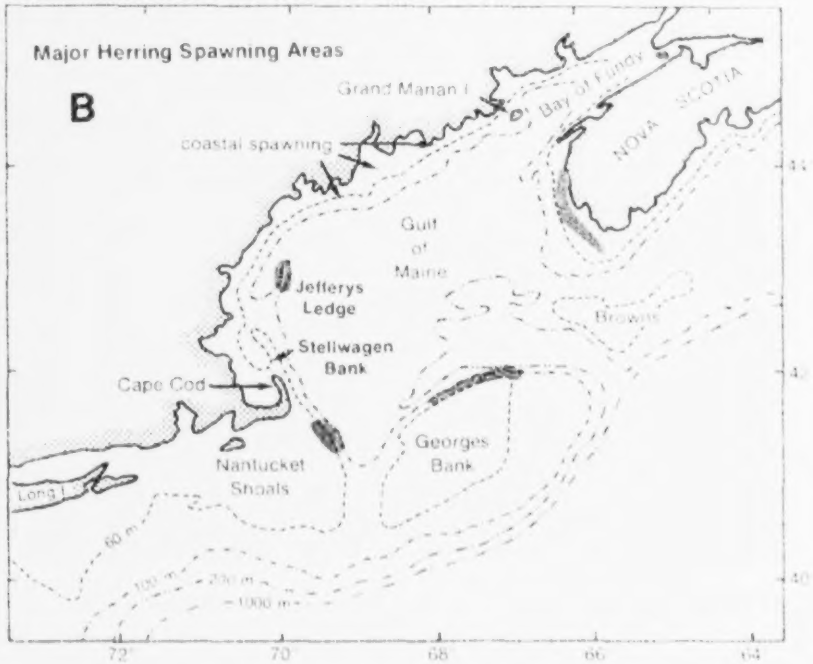
Major Herring Spawning Areas
B
Grand Manan I.
Bay of Fundy
NOVA SCOTIA
coastal spawning
Gulf of Maine
Jefferys Ledge
Browns
Stellwagen Bank
Cape Cod
Georges Bank
Nantucket Shoals
Long I.
60 m
100 m
200 m
1000 m
44°
42°
40°
72°
70°
68°
66°
64°

Figure 6. Example of a map containing several polygons (spawning areas).

Contours – A contour map shows value (e.g. abundance) and location of by means of interpolated lines and/or false colour (shaded) surfaces (Figure 7). The choice of interpolation methods has a major influence on the resulting lines and/or surfaces. Contour maps are standard output on most GIS systems. Contour lines are more readily converted to GIS form than surfaces. As part of the SSIP/FLP analysis, specialized contour maps known as *Cumulative Rank Abundance Percentile Maps* were also prepared. These are contour maps showing percentiles (e.g. 25, 50, and 75%) and give an outline of the area for which data was available, with a ranked cumulative abundance curve given as part of the key (Figure 8). These maps are intended to give a better representation of areas of actual distribution than contoured abundance alone. Additional detail on how these maps are produced is presented in Appendix B.

Figure 7. Example of a contour plot of egg distributions (from O'Boyle *et al.* 1984).

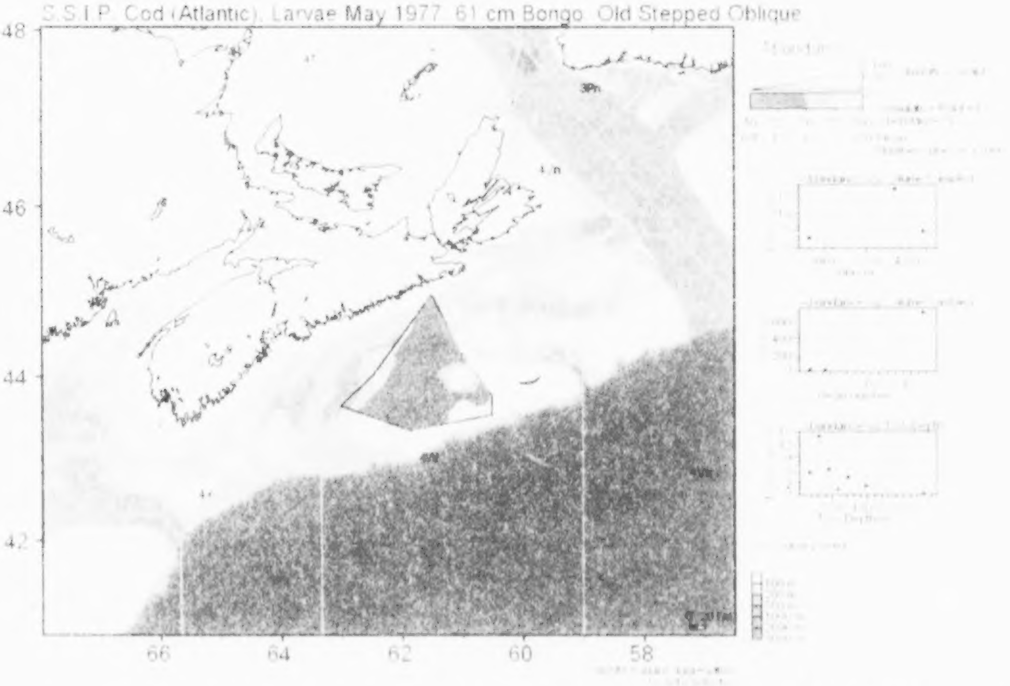
S.S.I.P. Cod (Atlantic), Larvae May 1977, 61 cm Bongo, Old Stepped Oblique
48
46
44
42
66
64
62
60
58
3Pn
4Vn
4W
4Vs

Figure 8. Cumulative ranked abundance percentile plot for cod larvae, May 1977, showing interpretive outputs (right hand side of graphic) (Map filename = L183-100-2-5-1-3-3-3.png)

Contours — A contour map shows value (e.g. abundance) and location of by means of interpolated lines and/or false colour (shaded) surfaces (Figure 7). The choice of interpolation methods has a major influence on the resulting lines and/or surfaces. Contour maps are standard output on most GIS systems. Contour lines are more readily converted to GIS form than surfaces. As part of the SSIP/FEP analysis, specialized contour maps known as *Cumulative Rank Abundance Percentile Maps* were also prepared. These are contour maps showing percentiles (e.g. 25, 50, and 75%) and give an outline of the area for which data was available, with a ranked cumulative abundance curve given as part of the key (Figure 8). These maps are intended to give a better representation of areas of actual distribution than contoured abundance alone. Additional detail on how these maps are produced is presented in Appendix B.

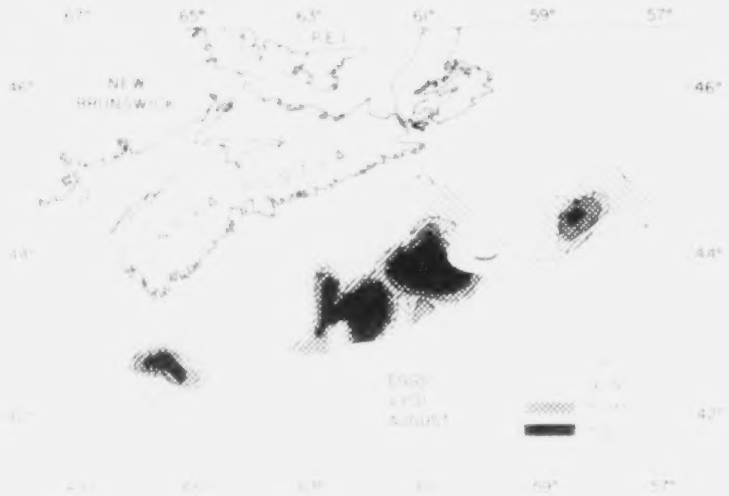
NEW BRUNSWICK
P.E.I.
65°
63°
61°
59°
57°
46°
44°
42°

Figure 7. Example of a contour plot of egg distributions (from O'Boyle *et al.* 1984).

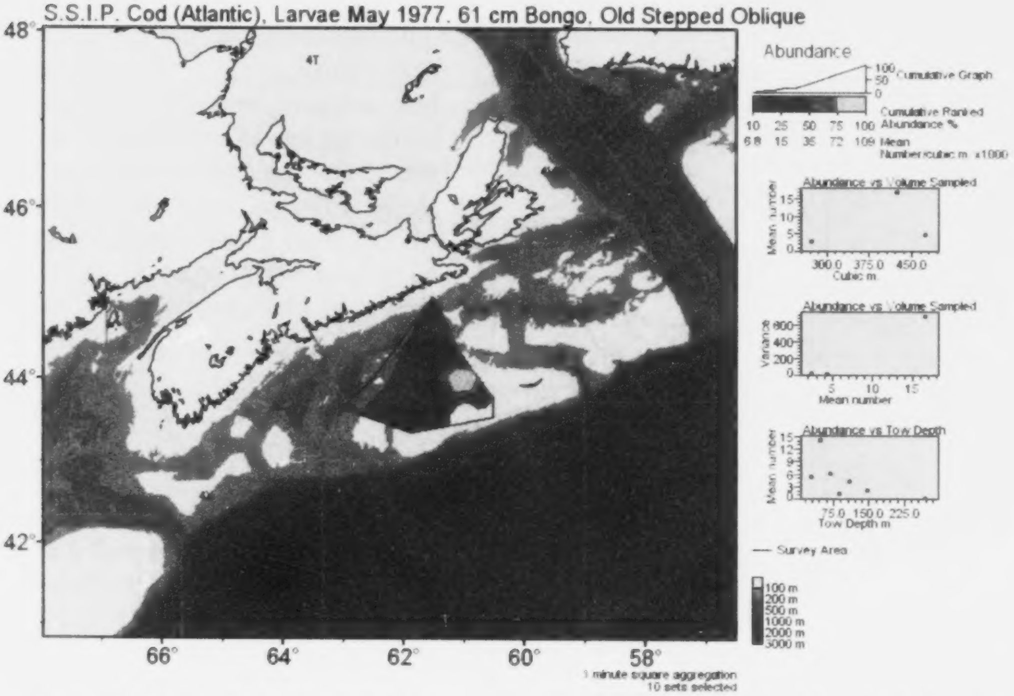
S.S.I.P. Cod (Atlantic), Larvae May 1977, 61 cm Bongo, Old Stepped Oblique
4T
48°
46°
44°
42°
66°
64°
62°
60°
58°
1 minute square aggregation
10 sets selected
Abundance
100
50
0
Cumulative Graph
Cumulative Ranked Abundance %
10 25 50 75 100
Mean Number/cubic m x1000
6.8 15 35 72 109
Abundance vs Volume Sampled
Mean number
15
10
5
0
300.0 375.0 450.0
Cubic m
Abundance vs Volume Sampled
Variance
600
400
200
0
5 10 15
Mean number
Abundance vs Tow Depth
Mean number
15
12
9
6
3
0
75.0 150.0 225.0
Tow Depth m
Survey Area
100 m
200 m
500 m
1000 m
2000 m
3000 m

Figure 8. Cumulative ranked abundance percentile plot for cod larvae, May 1977, showing interpretive outputs (right hand side of graphic) (Map filename = F183-100-2-5-1-3-3-3.png).

Other Interpretive Analyses — The SSIP/ FEP maps include three graphs which illustrate features of the data (Figure 8): 1) abundance versus volume sampled; 2) variance to mean number sampled; and 3) abundance versus tow depth. The graph of abundance versus volume sampled gives an indication of the patchiness of the distribution, since in the absence of patches, a more-or-less linear relationship should occur between number and volume sampled. The second graph is essentially a graphic display of the ratio of variance to mean number sampled (the 'variance to mean ratio' is the slope of this graph), which is another measure of patchiness of the distribution commonly used in ecology. Abundance versus tow depth gives an indication of the depth distribution of the ichthyoplankton stage. A species which is uniformly distributed with depth would be expected to show a more-or-less straight line at a particular value of "mean number".

Occasionally maps/graphics were available in digital form; otherwise they were digitized from scanned images of published material. The US National Marine Fisheries Service provided contour maps of cod egg and larval distribution from Lough *et al.* (1994) in original PCX format.

The SSIP/FEP maps were produced by one of the authors (J. Black) using the VDC ACON. Data were screened to determine species present in an adequate number of sets (cutoff level was the occurrence of a species/stage in a minimum of 5 sets) to provide meaningful presentation of abundance and distribution by month. Span of months in which particular stages occurred determined from this output was included in the database in the standard form for seasonal occurrence and timing. Average number per set were converted to values per unit area or volume using factors such as depth or trajectory of the tow and gear type performance from previous analyses based on tow volume and depth parameters. DFO researchers familiar with these data (P. Hurley and M. Fowler) reviewed the approach to ensure the result reflected subtleties of the data set (e.g. availability or absence of particular gear on cruises; peculiarities of types of flow meters; discrepancies between pairs of bongo nets etc).

2.3.3 Temporal Considerations

The earliest information reviewed was from the late 1950s[3] and early 1960s, with the bulk of the information coming from the 1970s through the 1990s. Timing of activities in the life cycle of offshore fish and invertebrates, particularly those of commercial significance, is a key input to various formal processes such as fisheries management and regulation (e.g. restrictions on fishing seasons, gear, and catch) and offshore activities (i.e. drilling and production activities; seismic surveys activities). All stages are involved, from adult and juvenile to egg and larvae, since they can be affected differently by different activities. There are two main types of seasonal information, namely: seasonal reproductive information and seasonal distribution information.

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[3] One study from 1914 (Dannevig 1919) was reviewed; some secondary references to studies in the mid-1950s were also included.

Reproduction

Seasonal reproductive information includes spawning and associated aggregations of adults and the resulting dense distributions of planktonic eggs and larvae, both in sequence and concurrent[4]. Information on timing of spawning is usually presented in terms of the month or date of commencement of spawning, as well as duration, endpoint and periods of most intense, or peak, activity. Information on timing of spawning and of the occurrence of eggs and larvae, is usually presented in similar terms. Some species have several spawning periods each year in a given area (e.g. Atlantic cod spawn over the winter, but in some areas there may be peak periods in the late fall and in the early spring, and a low in mid-winter (e.g. Smith *et al.* 1979). Several groups of species (e.g. redfish) may appear to have several spawning peaks in an area, but they can in fact represent peaks for the component species, or for different spawning components (e.g. spring and fall-spawning herring).

Seasonal reproductive information can be represented in 1) a text description of the timing; and 2) graphically on several kinds of graphs or charts in which the time period of the chart is on the horizontal axis divided into months and the duration of the period of concern is indicated by a line, a drawn-out symbol such as an ellipse, line or bar which widens at a particular time in proportion to the relative intensity of the activity the bar is supposed to represent (Figures 9 and 10). Where the information on seasonality was primarily presented in a graph, and where more specific interpretations were unavailable in the source document, the timing and peak abundance was summarized in the database, and the illustration was included in the data record as a bitmap for reference and viewing. The electronic database has been designed to capture these subtleties.

A further challenge of creating an electronic database of fish eggs and larvae information is that information used in the literature to determine seasonal activities of marine fish comes from a range of information sources, including interpretations of earlier studies, as well as various published assessments of timing and seasonality, often over a long period of time. To avoid losing important information on particular species, we included most of the information we found on spawning and reproductive seasonality, both original data and information summarized from previous or historical information. Subsequently, we highlighted specific database records which provided the most complete information on seasonality (i.e. beginning and end of period, peak period) for use in providing computer generated summaries; and coded the records to reflect the origin of the information (e.g. historical summary, quote from an earlier reference source etc.).

Distribution

Seasonal distribution of ichthyoplankton stages is usually determined from major data sets (e.g. SSIP, FEP and MARMAP) over broad areas and can be illustrated by a variety of mapping and graphic techniques as noted, typically showing averages of quantitative measures by season or month or cruise. Another source of information is studies where a catalogue of maps is produced; for example US MARMAP produced a report containing only map outputs (Berrien and Sibunka 1999). Maps in a catalogue could not readily be interpreted for inclusion in a data form (i.e. nongraphic) in the database; however many of these important maps were included in the database as seasonal or monthly bitmaps or polygons, which represent the distribution of fish eggs and larvae through the year.

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[4] Certain species don't have planktonic eggs (e.g. redfish, *Sebastes* spp. bear or 'extrude' larvae directly; and species such as herring and sand lance deposit eggs on the seabed and are only present in the plankton as larvae).

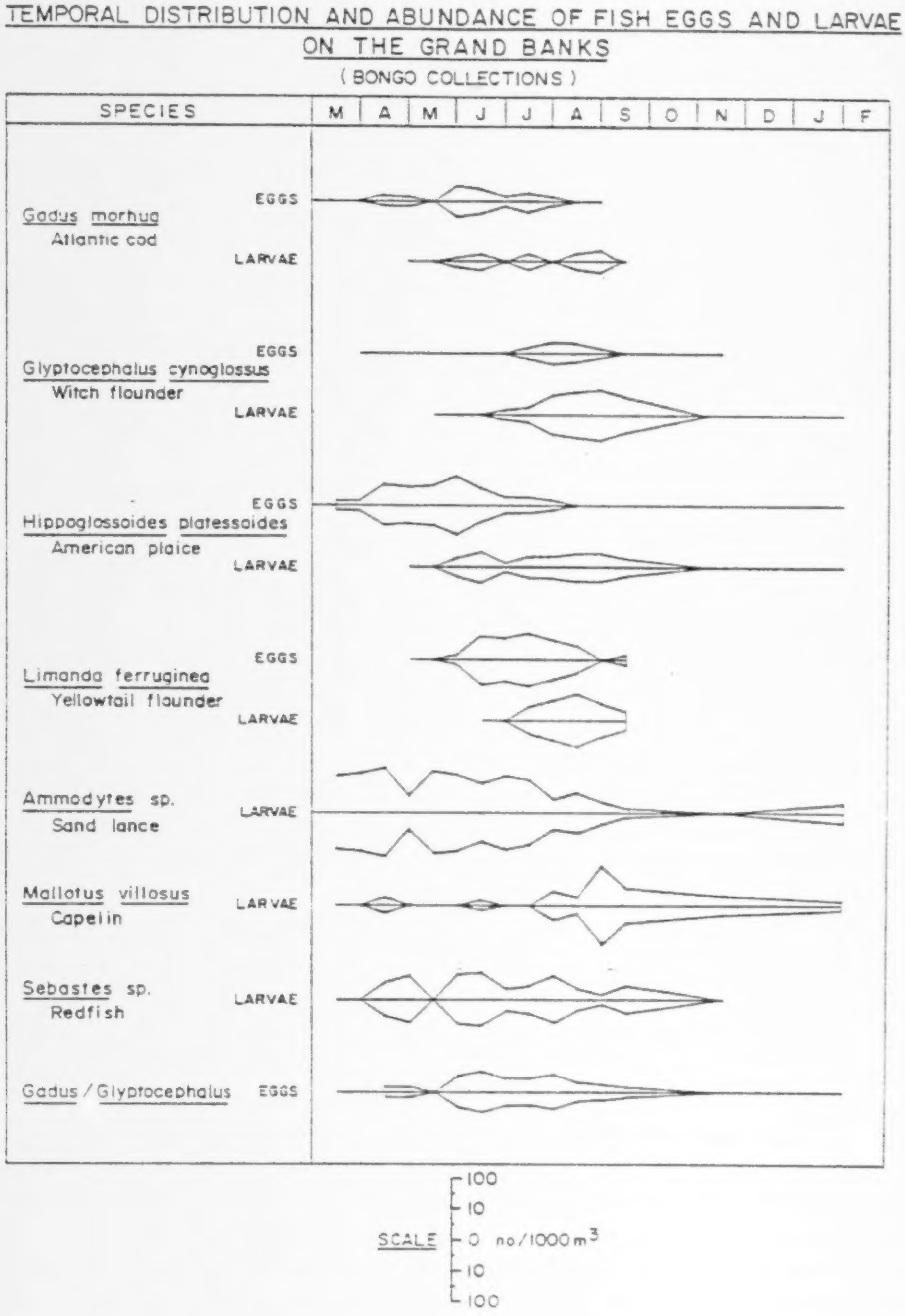

Figure 9. Example of a timeline diagram (from Bonnyman 1981).

Sample Report: by Area, Species and Stage

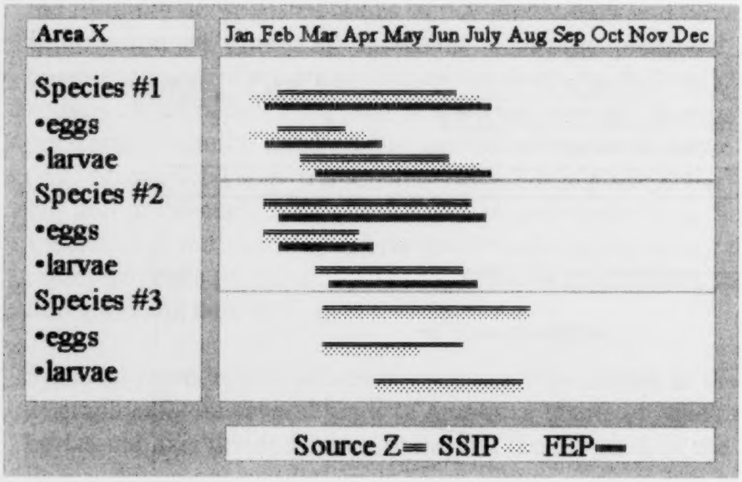

Figure 10. Concept for future development of timeline output generated from data contained in EAISSNA.

2.4 Information Quality

The majority of information sources used in this report are peer-reviewed publications or presumed so, and hence have been assumed to be of acceptable quality for inclusion. ICES committee presentations have typically been included, and have been compared against later primary publications with the same data to ensure there is not excessive duplication (with the later publication being given more precedence or weight). The availability of more extensive data on ichthyoplankton in more recent times, particularly in the 1970s and 1980s, and the gradual improvement in knowledge, has meant that there has undoubtedly been an improvement in the quality of interpretation of key features of ichthyoplankton distribution and abundance. However the availability of information on reproductive seasonality and fish egg and larval distributions and timing continues to be limited, so that all the information must be considered, to give a full picture.

3.0 EIASSNA TECHNICAL DETAILS[5]

3.1 Contents

EAISSNA is a collection of database tables and a library of graphics (maps, distributions, illustrative charts) that together summarize information on fish eggs and larvae on the Scotian Shelf, obtained from the literature and gathered in major Canadian ichthyoplankton studies and surveys (Figure 11). The database contains: 1) a bibliographic table (containing the source and copyright information); 2) a table containing additional references; 3) a data table (containing all information in terms of text or descriptive information and including references to graphics and GIS-compatible polygons; 4) a table containing a list of graphics from the literature included in the database; 5) a table containing relevant polygons from publications in GIS-compatible map-interchange format; 6) a table containing polygons generated from the SSIP and FEP databases in GIS compatible map-interchange format; 7) a table containing a gazetteer of topographic and physiographic features in GIS compatible map-interchange format; and 8) a table listing species and reference numbers. All graphics are presented as portable network graphics (PNGs) and many, including those digitized from original sources into MapInfo polygons, and all the graphics from the analysis of SSIP and FEP data, are presented in addition in both MID/MIF interchange format and as MapInfo files. The data structure for all the basic tables in the database are presented in Appendix C.

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[5] Additional technical information is presented in Appendix B.

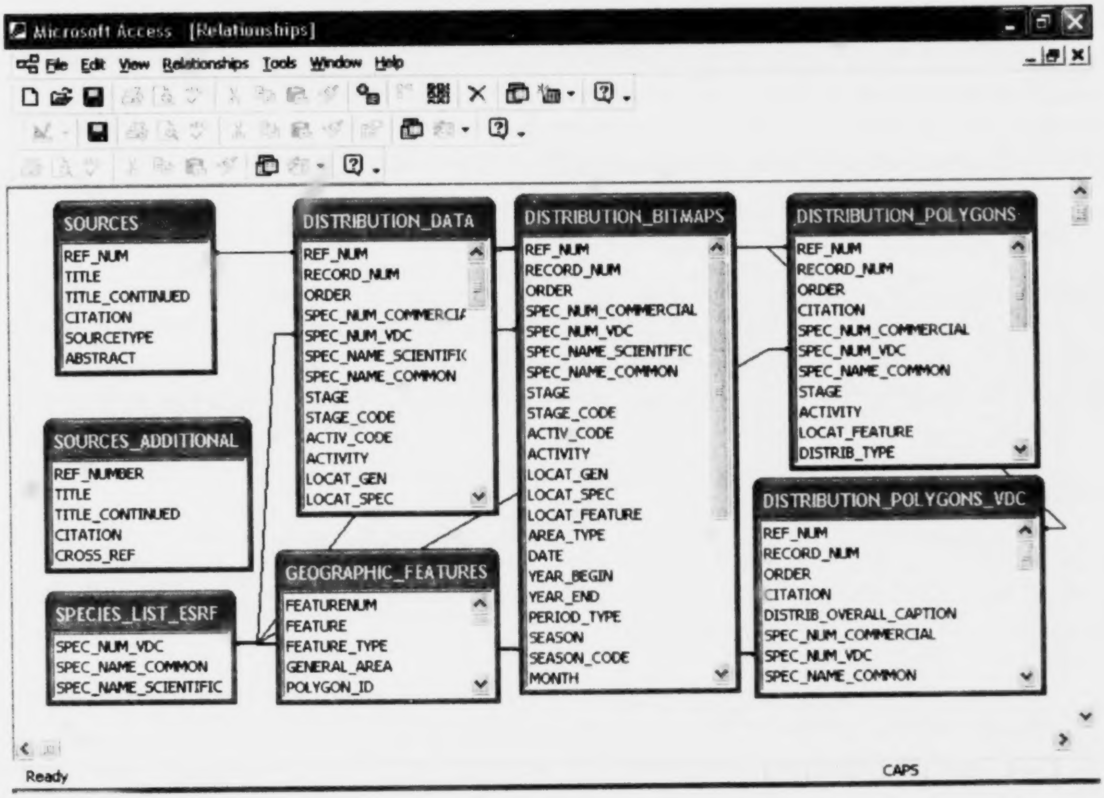
Microsoft Access - [Relationships]
File Edit View Relationships Tools Window Help
SOURCES
REF_NUM
TITLE
TITLE_CONTINUED
CITATION
SOURCETYPE
ABSTRACT
DISTRIBUTION_DATA
REF_NUM
RECORD_NUM
ORDER
SPEC_NUM_COMMERCIA
SPEC_NUM_VDC
SPEC_NAME_SCIENTIFIC
SPEC_NAME_COMMON
STAGE
STAGE_CODE
ACTIV_CODE
ACTIVITY
LOCAT_GEN
LOCAT_SPEC
DISTRIBUTION_BITMAPS
REF_NUM
RECORD_NUM
ORDER
SPEC_NUM_COMMERCIAL
SPEC_NUM_VDC
SPEC_NAME_SCIENTIFIC
SPEC_NAME_COMMON
STAGE
STAGE_CODE
ACTIV_CODE
ACTIVITY
LOCAT_GEN
LOCAT_SPEC
LOCAT_FEATURE
AREA_TYPE
DATE
YEAR_BEGIN
YEAR_END
PERIOD_TYPE
SEASON
SEASON_CODE
MONTH
DISTRIBUTION_POLYGONS
REF_NUM
RECORD_NUM
ORDER
CITATION
SPEC_NUM_COMMERCIAL
SPEC_NUM_VDC
SPEC_NAME_COMMON
STAGE
ACTIVITY
LOCAT_FEATURE
DISTRIB_TYPE
SOURCES_ADDITIONAL
REF_NUMBER
TITLE
TITLE_CONTINUED
CITATION
CROSS_REF
SPECIES_LIST_ESRF
SPEC_NUM_VDC
SPEC_NAME_COMMON
SPEC_NAME_SCIENTIFIC
GEOGRAPHIC_FEATURES
FEATURENUM
FEATURE
FEATURE_TYPE
GENERAL_AREA
POLYGON_ID
DISTRIBUTION_POLYGONS_VDC
REF_NUM
RECORD_NUM
ORDER
CITATION
DISTRIB_OVERALL_CAPTION
SPEC_NUM_COMMERCIAL
SPEC_NUM_VDC
SPEC_NAME_COMMON
Ready
CAPS

Figure 11. MSAccess tables which comprise EAISSNA. Principal relationships are indicated by lines, with the primary tables (parent) being the furthest to the left. The diagram does not show the complete list of fields for several of the tables. A complete list is presented in Appendix C.

Tables in the EAISSNA database are as follows:

Table Name	**Number of Records**	**References to Maps/Graphics**	**OLE Links**	**Data**
Distribution_Bitmaps	3186	✓	✓	
Distribution_Data	4169	✓		✓
Distribution_Polygons	304	✓	✓	✓
Distribution_Polygons_VDC	5418	✓		✓

Table Name	Number of Records	References to Maps/Graphics	OLE Links	Data
ESRF_Species_List	177			✓
Geographic_Features	123	✓	✓	
Sources	198			✓
Sources_Additional	160			✓

<Sources>

Literature and sources of new data (e.g. analysis of SSIP and FEP data) are contained in this table (*<Sources>)*. Each source has a reference number (from F1 to F198), a bibliographic reference (including author, date, title, and journal), an abstract, a journal citation, and copyright information. The reference number of each source is a common identifier in other tables in the EAISSNA database, which contain data and graphics originating in the source reference[6].

<Sources_Additional>

Secondary references identified but not consulted (i.e. those relevant references in the publications which were reviewed) are contained in this table, which also contains a cross-reference to the reference number of the document where the publication was referenced, as well as the full bibliographic reference and the citation. These references have a unique identifier field ("*ref_number*") and a cross reference ("*cross_ref*") to the reference in <*Sources*> table.

<Distribution_Data>

The main table in the database contains all the descriptive and quantitative information as well as references and OLE links to relevant graphics and other tables containing polygons and graphics. Included in the <*Distribution_data*> table are:

- Database relational & ordering information (identifier number of the reference; order of records within a reference; and record number in the table);
- Biological identifiers (species identifiers including common and scientific name, and commercial species and research codes used by DFO, stage, and relevant biological features such as if the record relates to spawning activity);
- Location information (names of the general and specific locations; including the name of a relevant geographic feature associated with the record, to be used in searching and retrieving data; lat/long coordinates of point data (e.g. spawning beds); and lat/long boundaries of the area to which the data applies, and which can be used for searches);
- External table references (such as the field "*polygons_graphics_avail*" indicating availability of maps and graphics in other tables; name and file references to linked graphics; and the maps/graphics file caption);
- Embedded Graphics (OLE links);

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[6] A 'one-to-many" relationship exists between the "*ref_num*" field in "<*Sources*>" and the other tables (i.e. the reference number only occurs once in <*Sources*> but it may occur more than once in the other tables.

- Time reference including date, time period of the information ("*year_begin*", "*year_end*");
- Seasonality information (type of seasonal information, suitability for seasonal report; monthly descriptive seasonal profile ("*month-begin*", "*month-end*" and "*peak*");
- Abundance information (specific estimates of abundance, population size, and egg production where available, and designation of area for which estimates apply);
- Sampling methods and survey program (SSIP, FEP, MARMAP) (gear type, survey type);
- Citation and source information (citation for reference, source citation of secondary data);
- Information quality descriptions (primary or secondary reference in "*data_origin_level*"), relative applicability to study area and level of effort in quality control and review "*Review_level*";
- General information (comment).

<Distribution_bitmaps>

Maps and graphics such as timeline charts illustrating seasonality and distribution of fish eggs and larvae are indexed and presented in the *<Distribution_bitmaps>* table, together with information on location and year to make them searchable in the context of a database management system and GIS. These include maps produced as portable network graphics (PNGs) from our analysis of SSIP and FEP datasets; individual relevant graphics and maps from source publications; and series of maps showing distributions of fish eggs and larvae for areas of concern throughout the year and occasionally over several years[7]. Information in this table includes:

- Ordering and relational information (reference to the source document, ordering information for the graphic within given references, and record number in the table);
- Location information (similar to the *<Distribution_data>* table, including local and general locations, and including the boundaries in latitude and longitude for the graphic);
- Biological identifier information (similar to that for *<Distribution_data>* (species name and code, but only the research survey code is included), stage and activity covered (e.g. spawning);
- Seasonality information (reduced set of information compared with the *<Distribution_data>* table, which refers to the time period represented by the graphic);
- Embedded graphics and file references (OLE links for display of graphics and filename of graphics for use in other database systems);
- Source information and citation; and
- General information (contains "*comment*" field).

<Distribution_polygons>

Maps showing areas (e.g. spawning areas) and contoured distribution and abundance, egg production, etc. were digitized into a GIS system (MapInfo Professional 5.5), making the information retrievable and available for use as data layers during environmental management activities (e.g. assessment of offshore oil and gas activities), as well as being searchable in terms of location name and geographic coordinates. For example, spawning areas on a map when digitized can be searched in a GIS environment, while spawning areas associated with a chosen point can be located by a simple database query on the geographic coordinates. Similarly, contour maps of egg or larval distribution can be made into a series of polygons (one for each density or abundance level), an approach we've used for the first time here. A search for polygons coinciding with a geographic point can determine not only the likely occurrence of eggs at the point, but also the attribute (e.g. abundance) associated with the polygon in which the point occurs. Relevant contour maps and maps of spawning areas were digitized (the scanned versions are also included as portable network graphics, indexed in the *<Distribution_bitmaps>* table and on the EAISSNA database CD), stored as MapInfo files, and converted to MapInfo transfer format (MID/MIF)—a text format which was stored directly in fields in the *<Distribution_polygons>* table. Information in *<Distribution_polygons>* includes:

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[7] Several source publications arising from the US MARMAP were catalogues of maps of distribution and timing of fish eggs and larvae (e.g. Berrien and Sibunka 1999) with no descriptive analysis. Selected maps from these series, which showed occurrences in the Scotian Shelf are included in the *<Distribution_bitmaps>* table.

- Ordering and relational information (source reference number, unique identifier for the map from which the polygons were digitized, an identifier for the layer within the original contour plot which the polygon represents);
- Location information (includes specific geographic feature; and latitude and longitude boundaries for the polygons[8]);
- Associated information (includes the abundance and units associated with the polygon), and the value of the lower boundary of the polygon; and
- Other information (includes caption for the polygon and the name of the portable network graphic associated with the map).

<Distribution_polygons_VDC>

The summary analysis of the SSIP and FEP data, carried out as part of this project by DFO Marine Fish Division (Virtual Data Centre, VDC) produced several types of maps which represent the distribution and abundance of fish eggs and larvae as well as some juvenile and adult stages, on a monthly basis and over all the years of those programs as a whole, for most species found, where sufficient data to make a meaningful presentation was available. The VDC maps, in the form of both scaled symbol and contoured rank abundance percentile plots, were produced as portable network graphics files (PNGS), MapInfo files, and as MID/MIF transfer files in a tab-delimited spreadsheet which was imported into MSAccess. *<Distribution_polygons_VDC>* has a similar structure to *<Distribution_polygons>*. The VDC PNG, MapInfo and MID/MIF files all have the reference identifier "F183" which refers them to the present study. Information in *<Distribution_polygons_VDC>* includes:

- Ordering and relational information (reference number of source), record number in database, unique polygon identifier generated by VDC;
- Biological identifiers (species, stage, species code);

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[8] A polygon can consist of single or multiple objects on the same layer in which case the outer boundary applies to all the objects together.

- Mapping/GIS Information (identifier for the layer within the original contour plot which the polygon represents; fields containing MapInfo MID/MIF transfer files; caption for polygon; and type of map (e.g. contour, percentile));
- Location information (includes either a description of the FEP area or the Scotian Shelf as a whole[9]; and maximum and minimum latitude and longitude boundaries for the polygons;
- Associated information (includes the abundance and units associated with the polygon layers; number and types of replicates; gear and time period; caption for the map); and
- Other information (citation for source document, comment).

<Geographic_Features>

This table contains records which index most of the familiar physiographic features (e.g. banks, basins, shelves) to aid in searches for information relevant to specific locations, either specified as geographic coordinates or by name. The contents include the name and an identifier number for each feature, the MID/MIF interchange information for transfer to GIS, the bounding latitudes and longitudes, and reference information on the feature from the Alexandria digital library, a web-based compendium of geographic features.

<ESRF_Species_List>

Species names and codes for species occurring in the EAISSNA database comprise the <*ESRF_Species_List*> table. Information includes species name (common and scientific) and identifier numbers, including DFO research and commercial survey codes[10], the international standard species code or Taxonomic Serial Number (TSN) from the Integrated Taxonomic Information System (ITIS) and world wide web (www) links to Fishbase, Larvalbase, and ITIS[11].

3.2 Structure

3.2.1 Database Implementation in MS Access

MS Access[12] was chosen as the primary database software because of its wide availability and compatibility with DFO systems. It is a relational database management system having capability at a minimum to contain the key types of data required for the project, including "memo" fields for long text graphics files such as GIS map interchange formats, and its use of Structured Query Language (SQL).

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[9] At this stage, only a general location description has been included. At a later stage, the maps can be examined and a more specific location for the centres of distribution of the eggs and larvae can be determined and added to the database. In the meantime, the maximum and minimum coordinates for the polygons contained in each record can be used to localize the distribution within the broader areas covered by the FEP and SSIP surveys.

[10] We did not include the commercial species code because numbers are not available for all species encountered.

[11] ITIS website http://www.itis.usda.gov/

[12] Use of this product does not constitute an endorsement by the Government of Canada.

3.2.2 Relationships

Tables in the EAISSNA database are related based on: 1) information source; 2) species and stage information; 3) geographic location; and 4) polygon contour information (Figure 11).

Information source—The '*ref_num*' field—the identifier for the source publication—is a unique identifier which links information in three tables ((*<Distribution_data>*, *<Distribution_polygons>*,*<Distribution_polygons_VDC>*, and *<Distribution_bitmaps>)*, and provides a connection as well with the *<Sources_Additional>* table (where the "*cross_ref*" field contains a reference to "*ref_num*" in the *<Sources>* table). These tables contain information from the source and may have one or more records for each source reference. The source reference number—"*ref_num*"—is always four characters in length with a leading "F" and includes blanks as separators.

Species and Stage Information—The *<Distribution_data>*, *<Distribution_polygons>*, *<Distribution_polygons_VDC>* and *<Distribution_bitmaps>* *tables* share the fields "*spec_num_vdc*", and "*spec_name_common*", and the "*spec_name_scientific*" and "*spec_num_commercial*", fields occur in all but the *<Distribution_polygons_VDC>* table. With the exception of "*spec_num_commercial*", these are all related to the table *<Species_List_ESRF>*. The tables also share the fields "*stage*" and "*activity*".

Geographic Location—Each of the four tables ((*<Distribution_data>*, *<Distribution_polygons>*, *<Distribution_polygons_VDC>*, and *<Distribution_bitmaps>)* share the field "*locat_feature*", which contains the name of the geographic feature (s) appropriate for each of the data records. Each of the tables can be searched on this field to locate information related to geographic feature. The names of features in this field are all contained in the *<Geographic_Features>* table (in the "*feature*" field) and the *<Geographic_features>* table provides a linkage for searches of geographic coordinates, to the other tables. Information in the *<Distribution_polygons>* and *<Distribution_polygons_VDC>* tables can be accessed by a search on fields containing the maximum and minimum coordinates for the polygon, and has the potential to be accessed by a search of the lat/long coordinates of a geographic location to locate the polygons in which the coordinates of the polygons in this table are located (sets of coordinates describing the boundary of the polygons are stored in the "*distrib_polygons_MIF*" field)[13].

Polygon Contour Information—In two tables which contain polygon information (*<Distribution_polygons>*,and *<Distribution_polygons_VDC>*) the field "*polygon_level*" identifies the individual contour levels within a given polygon.

3.3 How to Operate EAISSNA

The MSAccess implementation of EAISSNA is intended to hold the data and to have limited query capability built in, but to have the tables accessible to the user to query or to download information. To operate the database, the user must own MSAccess or a comparable database management system (DBMS) capable of importing MSAccess files.[14]

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[13] This type of search cannot be accomplished in MSAccess, but can be done by importing the polygon boundaries in MID/MIF format into a GIS system, or into a database system which permits the more complex queries to allow this type of search to be carried out.

3.3.1 Basic Operation

MS Access 2000 files containing the database are contained in the root directory of the CD. There are also subdirectories that contain MapInfo files and portable network graphics (PNGs), also named to indicate contents. The contents of the CD must be transferred to the user's computer for most effective use.

Opening the MS Access file for the database ([*EAISSNA.db1* or [*EAISSNA.mdb*]) allows the user access to all the tables and supporting queries, report forms, data entry forms etc. contained in the database, via a menu system. The user can choose a display window for each of these main components of the database; double-clicking on the icon and name for the particular item appropriate to the window allows the user to run the appropriate tool (e.g. selecting the 'TABLE' window, and double clicking on the "SOURCES" icon in the EAISSNA database, opens the table containing the bibliographic information). A basic display window from EAISSNA for data tables is presented in Figure 12 and a basic table display is presented in Figure 13.

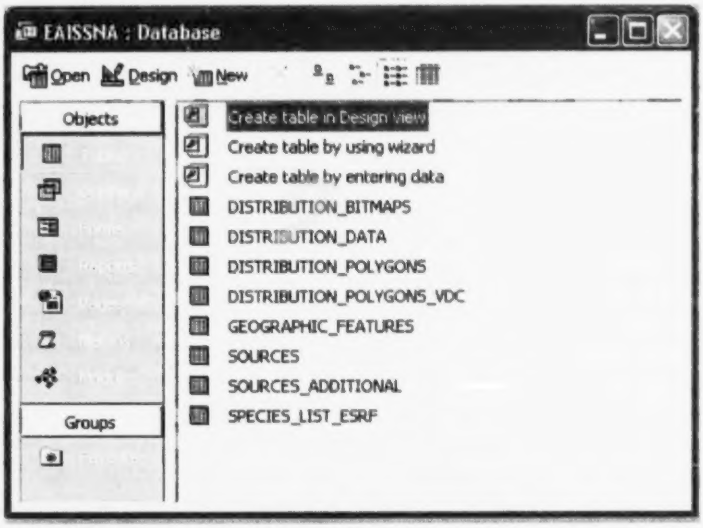
EAISSNA : Database
Open
Design
New
Objects
Groups
Create table in Design view
Create table by using wizard
Create table by entering data
DISTRIBUTION_BITMAPS
DISTRIBUTION_DATA
DISTRIBUTION_POLYGONS
DISTRIBUTION_POLYGONS_VDC
GEOGRAPHIC_FEATURES
SOURCES
SOURCES_ADDITIONAL
SPECIES_LIST_ESRF

Figure 12. MicroSoft Access table window showing tables contained in the EAISSNA database. Double-clicking on the selection will open the table in a typical table or spreadsheet type view.

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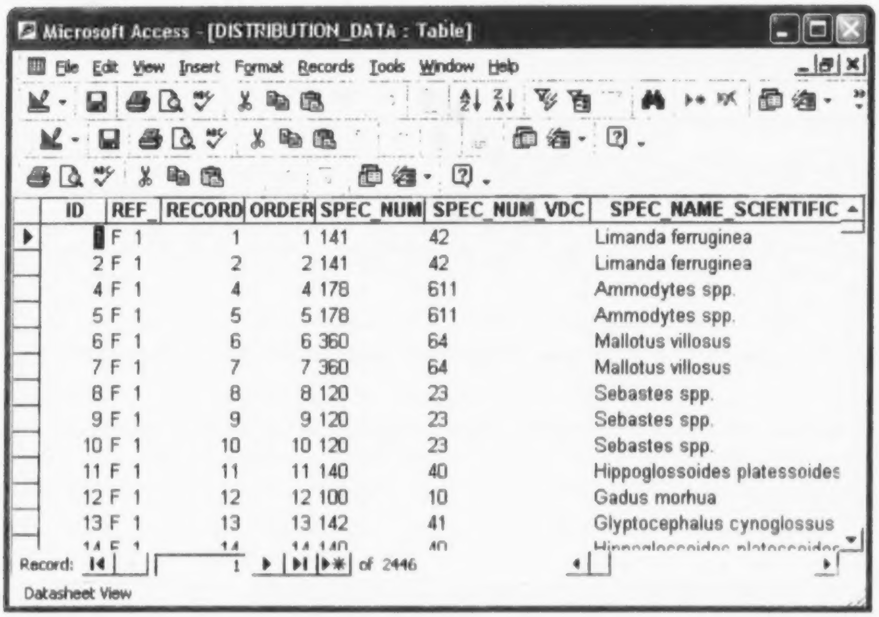
[14] Check your own database management system for capability to import MSAccess files. At a minimum it is likely that most systems will allow import of MSAccess97 databases, although there may not be complete compatibility (e.g. Oracle DBMS). MSAccess97 is the default version to which MSAccess 2000 can be converted and preserve its features.


Microsoft Access - [DISTRIBUTION_DATA : Table]
File Edit View Insert Format Records Tools Window Help
Record: 1 of 2446
Datasheet View

ID	REF_	RECORD	ORDER	SPEC_NUM	SPEC_NUM_VDC	SPEC_NAME_SCIENTIFIC
1	F 1	1	1	141	42	Limanda ferruginea
2	F 1	2	2	141	42	Limanda ferruginea
4	F 1	4	4	178	611	Ammodytes spp.
5	F 1	5	5	178	611	Ammodytes spp.
6	F 1	6	6	360	64	Mallotus villosus
7	F 1	7	7	360	64	Mallotus villosus
8	F 1	8	8	120	23	Sebastes spp.
9	F 1	9	9	120	23	Sebastes spp.
10	F 1	10	10	120	23	Sebastes spp.
11	F 1	11	11	140	40	Hippoglossoides platessoides
12	F 1	12	12	100	10	Gadus morhua
13	F 1	13	13	142	41	Glyptocephalus cynoglossus

Figure 13. MicroSoft Access table view of the <DISTRIBUTION_DATA> table from EAISSNA.

Several uses of the database are possible for users having limited knowledge of database management systems; but getting full access to the information in the database requires that the user become familiar with the content and the simplifying tools (and even with basic Structured Query Language (SQL)) to create user-specific queries.

Examine Database Tables, Order and Sort, Print Information—Several of the tables in the database contain relevant information which can be used fruitfully by simply opening the table. Tables of this kind include: <*Sources*> (containing the bibliographic information, source reference number, abstract, and copyright information); <*Sources_additional*> (which is essentially a list of additional references on ichthyoplankton on the Scotian Shelf); <*Species_List_ESRF*> (containing species common and scientific name and DFO commercial and research codes, and standard number under the Integrated Taxonomic Information System (ITIS)); and <*Geographic_Features*> (which contains the name and reference number for most map features for Eastern Canadian marine areas and the Northeast Atlantic Continental Shelf of the United States; source information, and a reference number from the Alexandria Digital Library).

View Selected Graphics Contained in Source Publications—Maps and illustrative graphics (such as timelines) from the literature, associated with particular source references are linked by the OLE protocol to records in the <*Distribution_bitmaps*> table. The simplest approach to viewing the graphics and maps in the tables is to open the table, sort it based on the reference number ("*ref_num*") or the citation ("*citation*") field, together with the "*order* " field, and then to 'scroll' down to the appropriate reference. To view the graphics or maps associated with the reference, point to the cell having the linked map—("*Distrib_bmp_ole*" or "*Distrib_overall_ole*" depending on which table you're in) and double click[15]. The caption for the graphic is contained in the "*Distrib_bmp_caption*" field. Map series to support summaries of distribution of particular species (e.g. Hurley and Campana (1989) for SSIP data) or which are primarily atlases of map outputs (e.g. Berrien and Sibunka (1999) for MARMAP data), can be productively viewed in this way. The file name for the graphic is also listed in the table (e.g. the field "*Distrib_bmp_fileref*" in the <*Distribution*_bitmap> table, and allows a user to identify and use a graphic outside the MSAccess environment (all the graphics and maps are found in their original form as Portable Network Graphics (PNG) in an appropriate directory on the CD, either "Graphics" for those maps and graphics from publications in the literature, or "Graphics VDC" for maps generated from analysis of SSIP/FEP data as part of this project. Each directory has an HTML index which allows maps to be found by species, stage and month of occurrence, as well as other information). The tables <*Distribution_data*>, <*Distribution_polygons*> and <*Distribution_polygons_VDC*> all include the file references to, and caption for, relevant graphics and MapInfo files, although they have not been linked, to keep the database at a manageable size. After installation of the database on a computer system, the links can be established manually (although labour-intensive) to suit the user's needs.

Individual tables found in the database can be exported to other software packages such as spreadsheets, other database management systems, and text files. This approach may allow a user to work with a particular set of data in a more familiar software environment.

3.3.2 Limits to Use

EAISSNA is designed primarily to contain, and allow a moderate level of searching and reviewing of, information on fish eggs and larvae from literature, and from several major Canadian ichthyoplankton surveys. In addition, the information has been organized to allow specific summary information to be extracted, in particular information on seasonality of occurrence of spawning activity and distribution and occurrence of fish eggs and larvae. The typical approach envisioned is to identify a location either in terms of a distinct feature (e.g. Sable Island Bank) or a latitude or longitude reference.

3.3.3 Updating the EAISSNA Database

The database on the CD is of necessity 'read-only' but once transferred to a computer system, can be updated. We recommend that information be added formally, and that the additions lead to a further sequel publication (e.g. DFO Technical Report) outlining the publications which have been added and the nature of any publications included. Entry of data into the database is straightforward and enough information is provided here to guide data entry and quality control.

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[15] The action of double-clicking on a linked graphic should launch a graphics viewer such as Windows Paintbrush or Internet Explorer browser, to view the image. If an image doesn't appear, MSAccess should be exited, and the graphics viewer program should be launched manually and run in the background.

3.3.4 Copyright

The EAISSNA database is a source of and guide to information available in the scientific and fisheries management literature. With the exception of several information sources described below, no formal copyright authorization has been obtained for information and graphics contained in the database. Instead, the name, and if possible, contact information for the copyright holder, has been included. Users are advised that the same consideration and formal approach should be applied to the use of graphics and maps in this database as would be applied to the use of the information directly from the literature (i.e. appropriate permission should be obtained from the original publisher before any formal use) (e.g. publication of a graphic from a scientific paper; any for-profit initiative). It is the intent to seek comprehensive permissions before further the database is further developed (e.g. for use on a web portal through the DFO VDC and for development of advanced tools for using the database). In addition, the database CD will initially be distributed only in response to a formal request, with an acknowledgement of the need to recognize the formal restrictions in the original publications.

3.4 Creating Your Own Reports

Various types of information are contained in EAISSNA, and more use can be made of it by using simple database queries, and we encourage the user to attempt to learn the automated query generation capability in MS Access; as well as to attempt use of simple SQL statements[16]. A query is a set of database commands which selects data of interest and produces a visible output on the computer monitor, usually in a tabular format, which shows the results of the query. Use of automated query generation in Access is accessed by selecting the "Queries" window and selecting the "New" option on the toolbar and then the "Simple Query Wizard". With a bit of practice, and an understanding of the information types contained in the database, useful queries can be carried out. From the same "Queries" window, selecting the "Design" option allows the entry of SQL commands, or, if a query in the window is selected, shows the SQL statements for the query. There is, of course, much more to understanding database queries than can be presented here.

Approaches for accessing the information in the database include:

1) *User-based Examination and Query.* The structure of the database is relatively simple and much of the identifier information has been retained in both coded and uncoded form, so that a user can page through and search data tables using simple queries and reports, to obtain basic information. For example, using a simple query for a geographic area (e.g. Georges Bank) (Figure 12), a species and stage and a code (Wolffish eggs, or research survey code = 340) and records having a seasonal summary report ("*Timing_report*" = 1), shows suitable records in the database, and timing information. Sorting the <*distribution_data*> table on species and geographic area (using the sort criteria [*Locat_spec* like "*Georges Bank*", *species_name_common* like "*Wolffish*", and "*timing_report*=1"] orders the database and shows the same information by scrolling down through it.

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[16] A good introductory reference to SQL is Stephens and Plew (2000).

2) *Listing Availability of Data, Polygons and Graphics.* A simple query for a geographic area in each of the three main tables (<*Distribution_data*>, <*Distribution_bitmaps*>, <*Distribution_polygons*>, and <*Distribution_polygons_VDC*>, in conjunction with the species and stage required, can display relevant records for a particular area. The information can be presented by reference source and categorized by other features of the information.

3) *Search for Specific Coordinates.* Five database tables (<*Geographic_features"*>, <*Distribution_data*>, <*Distribution_bitmaps*>, <*Distribution_polygons*>, and <*Distribution_polygons_VDC*> can be searched for information relating to particular latitude and longitude coordinates, based on georeferences falling within maximum and minimum latitude/longitudes contained in respective fields in the database (these fields are "*maxlat*", "*minlat*", "*maxlong*", and "*minlong*". Specify the coordinates to be searched and other criteria (species name, stage), to determine the geographic feature the points occur in and list abundances and geographic features of all species and stages for which abundances are available.

4) *Locate and View Maps and Graphics.* For a given geographic area, species, stage and other required information, identify records in the <*Distribution_data* > table which contain graphics (i.e. if the field "*distrib_bmp_fileref*" or "d*istrib_overall_fileref*" contains the name of a graphic).[17] Note down the file reference, and then look in the <*Distribution_bitmaps*>, or <*Distribution_polygons*> tables to find that reference in the "*distribution_bmp_fileref*" or "*distribution_overall_fileref*" fields. All of the maps (with the exception of those generated in this study from SSIP and FEP data, as noted above) are linked to the appropriate graphics. Double clicking on the cell entry under the field "*distrib_bmp_ole*" or "*distrib_overall_ole*" will display the map. Alternately, the map can be viewed directly in the appropriate directory on the CD.

In addition to the approaches noted above, several additional kinds of searches or queries can be made on the database, which may prove useful in particular situations and to maintain order in the database.

Record_num and Order fields—The "*record_num*" field provides an overall order to the database table <*Distribution_data*>. If sorted by "*record_num*", the database will maintain an order in which all the records for a particular reference occur together. Using the field "*order*" in addition, will maintain the order of entry of records in a particular reference. Since "*order*' has a unique cycle for each reference, it can maintain groupings of records within a reference.

Locat_feature field—Provides the location to allow searches of geographic areas (e.g. Browns Bank) in the <*Distribution_data*> and <*Distribution_bitmaps*> tables. A search or query on the name of the feature for which information is required will yield records for that area. The "*locat_feature*" field contains standard names for the features, obtained from the <*Geographic_features*> table, which are the common name for the feature.

Year_begin and Year_end—This field in <*Distribution*_data> and <*Distribution_bitmaps*> tables can be used to isolate information on the basis of time period or era. A sort or query of the database based on a range of "*year_begin*" would select records which are before or after or between particular years. In most cases, the "*date*" field includes single years or ranges of years (rarely a more specific date) and so this field can also be searched to filter out records based on year.

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[17] In Microsoft Jet SQL, a query that locates these records includes the phrase "WHERE *distrib_bmp_fileref* is not null;"

Timing_report— Records that have a "1" in this field in the <*Distribution_data*" table have information that presents seasonality in a standard way (i.e. having information in the "*month_begin*", "*month_end*" and possibly in the "*peak*" fields. If only these records (i.e. "*timing*_report" = 1) are selected in a search, and the database is sorted on the basis of the species ("*species_name_common*", stage ("*stage*") and activity ("*activity*"), then the timing information for a particular area can be determined by scrolling down and finding the required location in the area ("*locat_feature*") field[18]. A query of this type was used to generate Appendices D to F.

Abundance or Population Information—Many of the studies included quantitative information on abundance of ichthyoplankton. Although it is not comprehensive or standardized enough to be used statistically, it becomes an attribute for an area or station. For example, a search of these records based on latitude/longitude coordinates could find polygons or nearby stations for which there is an estimate of the abundance of eggs or larvae at a particular time—45° N, 67° W, might have two polygons over it, in two years, where the abundance of eggs on two dates were 0.1 / 100 m^2 and 34 / 100 m^2. A simpler way to search for abundance information is to search a geographic feature of interest and look for records where the two fields which contain quantitative information—"*abundance*" and "*population*" — have numbers in them[19]. These two fields have associated fields—"*abundance_for*" and "*population_for*"—which give a qualification of the geographic area to which the abundance/population estimates apply. For example sometimes the estimate will apply a spawning bed within a specific geographic feature, and not the feature as a whole, thus requiring a qualification.

Simple searches of polygon information can be carried out for information in the <*Distribution_polygons*> and <*Distribution_polygons*_VDC> tables. The attribute value associated with the polygon and units are contained in the fields "*Distrib_abund*" and "*Distrib_abund_units*" respectively. Such a search would look for records where the latitude and longitude of the point for which the search was conducted, lay within the maximum and minimum geographic limits of the polygon ("*maxlat*", "*minlat*", "*maxlong*", "*minlong*") boundary[20]. For a similar search on the <*Distribution_polygons_VDC*> table, the respective fields having the attribute information are "*abund_upper*" and "*abund_units*".

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[18] A simple query in MicroSoft Jet SQL to find information for a timing report on a species in a particular area is "SELECT month_begin,month_end,peak FROM distribution_data WHERE species_name_common like "Atlantic Cod*" and locat_feature like "Western Bank"; "

[19] An SQL query would include the condition "…WHERE abundance is not null or population is not null", in addition to the information outlining the other conditions of the query.

[20] In SQL, the part of the query having the search criterion would be "…WHERE maxlat >= [*latitude coordinate*] and [minlat <= [*latitude coordinate*] and maxlong <= [*longitude coordinate*] and minlong >= [*longitude coordinate*]. Note that the longitude must be specified in negative decimal degrees.

4.0 FUTURE DEVELOPMENT OF EAISSNA DATABASE

4.1 Ichthyoplankton Research and Datamining the EAISSNA Database

The analysis and outputs specifically generated from SSIP/FEP data in this project are at a minimal level of detail, and additional analysis and interpretation can be carried out and added to future versions of the database. For example, the seasonal summaries of timing of occurrence of eggs and larvae apply to the study area as a whole rather than detailing local differences; while the database contains enough information to allow more specific locations (e.g. localizing the occurrence of a species to a particular bank and season). A user can review the information outputs available (the summary of the monthly periods during which significant numbers of the stage in question were available, as well as the summary distribution maps) to get a more complete picture of the timing and actual location of density contours, which can then be used to determine the centers of distribution. The database is structured such that retrieval of this more-detailed information can be automated, although we chose not to carry out this analysis at present. Maps from our analysis of SSIP/FEP data are accessible by an included HTML index. In addition the database contains some information from areas adjacent to the Scotian Shelf, as well as information on invertebrate larvae, which could also be examined and summarized.

4.2 Database and Connectivity

The EAISSNA database is a first step in making accessible via a single access point and the internet, a broad collection of information on ichthyoplankton for the Scotian Shelf region (Figure 14). In its current form, it can be used for a variety of information gathering activities relevant to both offshore environmental assessment and to research and resource management objectives. In common with many other databases, it has increased potential when linked via networks and the internet to global users. In particular, the database could be placed on *GeoConnections*, a government of Canada web portal[21]. Several capabilities can be developed to utilize the database information, either in MSAccess or on other database management systems such as the DFO Oracle environment. Some of the capabilities which could be developed include:

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[21] http://www.geoconnections.org

EAISSNA

Electronic Atlas of Fish Eggs and Larvae on the Scotian Shelf of North America

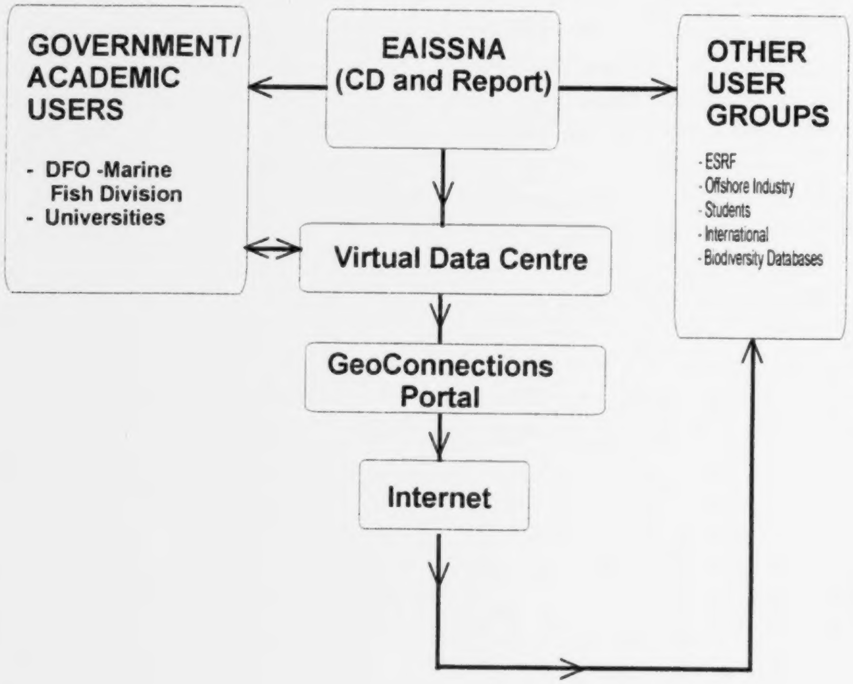
GOVERNMENT/ ACADEMIC USERS
- DFO -Marine Fish Division
- Universities
EAISSNA (CD and Report)
OTHER USER GROUPS
- ESRF
- Offshore Industry
- Students
- International
- Biodiversity Databases
Virtual Data Centre
GeoConnections Portal
Internet

Figure 14. Concept of EAISSNA.

Location Search Functions—Currently only simple queries based on geographic coordinates can be carried out, in particular allowing data records to be located based on the maximum and minimum latitude and longitude of either: entire maps containing the data; geographic features; or extents of digitized polygon information. The database contains, however, detailed information on geographic coordinates of polygons and geographic features which have been digitized and produced in MapInfo or through the DFO VDC—which is stored in the database in map interchange format. Capabilities available in DFO VDC and in major GIS platforms will be adapted to allow searches based on latitude and longitude coordinates, to locate specific polygons, and associated more-detailed information on fish egg and larvae attributes for the point.

Automated map/GIS functions—A standard GIS capability could be added to allow the user to point to or circumscribe a box including a location on an on-screen map of the Scotian Shelf, and generate a search which would: itemize data and graphics for the area; provide a species list for eggs and larvae; show specific features such as spawning areas occurring in or around the location; or provide a list of literature associated with the site.

HTML Interface/Index for Viewing DFO VDC Maps of SSIP and FEP Data — The maps of distribution of eggs and larvae generated by DFO Virtual Data Centre can be made more accessible by indexing them for use through an internet 'browser' software program such as Internet Explorer or Netscape. Simple indices in HTML have been included, allowing identification of the maps by contents rather than file number (e.g. Wolffish, May 1979, 1981-82), but more and particular indices could be developed. Availability in this form also makes the files accessible to internet users through a web portal.

Open GIS Connectivity/GIS IMS—The database can be linked to major GIS systems, and to applications for accessing geospatial data through the internet. A selection of searches could be designed and selected by the internet user. Many of the more simple searches/queries provided with the database could be included in an internet application, and provisions could be made for export of portions of the data/information/graphics in data tables or spreadsheets.

Ongoing Update of Ichthyoplankton Information—Software tools will be developed for updating the database with new information and generating of compatible data from new survey information.

5.0 ACKNOWLEDGEMENTS

We acknowledge the financial support of the Environmental Studies Research Funds (ESRF), without which the project would not have taken place. Many individuals were involved in developing EAISSNA through participation in meetings, review of documents, and provision of content for the database. In particular we would like to thank Mark Fowler, Ken Frank, Charles Hannah, Peter Hurley and Tana Worcester of Fisheries and Oceans Canada, and Pierre Brien and Derek Broughton of Evans Computer Applications, for their input.

6.0 REFERENCES

Aronoff, S. 1991. *Geographic Information Systems: A Management Perspective.* WDL Publications, Ottawa, 294 p.

Berrien, P. 1983. Silver hake, *Merluccius bilinearis,* egg census and adult population estimate for 1979 in waters off eastern United States. ICES CM G:46.

Berrien, P. and J. Sibunka. 1999. Distribution patterns of fish eggs in the U.S. northeast continental shelf ecosystem, 1977-1987. U.S. Dep. Commer., NOAA Tech. Rep. NMFS 145, 310p.

Black, G.A.P. 2002. ACON Data Visualization Software User Manual – Version 9.15. http://www.mar.dfo-mpo.gc.ca/science/acon/

Black, G.A.P. and R. Mohn. 1993. Interactive Data Visualization of Fisheries Management Systems. ICES CM1993/D:6, 17 p.

Bonnyman, S. 1981. Section VI, Icthyoplankton of the Grand banks of Newfoundland. Grand Banks Oceanographic Studies, Volume 2. Report to Mobil Oil Canada Limited. MacLaren Plansearch Inc, St. John's, Nfld.

Branton, R. M., G. Black and J. McRuer. 2001. Marine Fish Division/Invertebrate Fisheries Division Virtual Data Centre [In] 2001, B.I.O. 2001 in Review. Dept. of Fisheries & Oceans Misc. Publ. Cat. No. Fs75-104/200E: 28-29

Breeze, H., D.G. Fenton, R.J. Rutherford, and M.A. Silva. 2002. The Scotian Shelf: an ecological overview for ocean planning. Can. Tech. Rep. Fish. Aquat. Sci. 2393: x + 259 pp.

Colton, J.B. and R.F. Temple. 1961. The Enigma of Georges Bank spawning. Limnol. Ocanogr. 6: 280-291.

Colton, J.B., W.G. Smith, A.W. Kendall, Jr., P.L. Berrien and M.P. Fahay. 1979. Principal spawning areas and times of marine fishes, Cape Sable to Cape Hatteras. Fishery Bulletin 76: 911-915.

Dannevig, A. 1919. Canadian fish-eggs and larvae. Biology of Atlantic waters of Canada. Canadian Fisheries Expedition, 1914-15.

Davis, D.S. and S. Browne. 1997. The Natural History of Nova Scotia. Nimbus Publishing and Nova Scotia Museum, Halifax, Nova Scotia.

Davis, R. A., D. H. Thomson, and C. I. Malme. 1998. Environmental Assessment of Seismic Exploration on the Scotian Shelf. Report to Mobil Oil Canada Properties Ltd., Shell Canada Ltd., Imperial Oil Ltd by LGL Ltd.

Dickie, L.M. and P.C. Smith. 1989. Fisheries Ecology Program: An Introduction. Can. J. Fish. Aquat. Sci. 46: 538.

Fader, G.B., L.H. King and B. MacLean. 1977. Surficial geology of the eastern Gulf of Maine and Bay of Fundy. Marine Sciences Paper No. 19, 23 p., Canadian Hydrographic Service, Dept. of Fisheries and the Environment, Geological Survey of Canada, Dept. of Energy, Mines and Resources, Ottawa, Canada.

Fader, G.B., L.H. King, and H.W. Josenhans. 1982. Surficial geology of the Laurentian Channel and the western Grand Banks of Newfoundland. Geological Survey of Canada, Paper 81-22. 37 p.

Fortier, L. and A. Villeneuve. 1996. Cannibalism and predation on fish larvae by larvae of Atlantic mackerel, *Scomber scombrus*: trophodynamics and potential impact on recruitment. Fishery Bull. 94: 268-281.

Frank, K.T., K..F. Drinkwater and F.H. Page. 1994. Possible causes of recent trends and fluctuations in Scotian shelf/Gulf of Maine cod stocks. ICES mar.Sci. Symp., 198: 110-120.

Graham, J., S. Engle and M. Recchia. 2002. Local knowledge and local stocks: an atlas of groundfish spawning in the Bay of Fundy. The Centre for Community-based Management. St. Francis Xavier University, Antigonish, N.S.

Hanke, A.R., F.H. Page, and J. Neilson. 2001a. Distribution of pollock (*Pollachius virens*) eggs and larvae on the Scotian Shelf, eastern Gulf of Maine, Bay of Fundy and eastern Georges Bank. Can. Tech. Rep. Fish. Aquat. Sci. 2345: iii+120p.

Hanke, A.R., F.H. Page, and J. Neilson. 2001b. Distribution of haddock (*Melanogrammus aeglefinus*) eggs and larvae on the Scotian Shelf, eastern Gulf of Maine, Bay of Fundy and eastern Georges Bank. Can. Tech. Rep. Fish. Aquat. Sci. 2329: iii+133p.

Harding, G. C., K. Drinkwater, J.D. Pringle, A.J. Fraser, J. Prena, S. Pearre, Jr., R.I. Perry and W.P. Vass. 1995. Studies on the effect of the frontal zone on the northern face of Georges Bank, Gulf of Maine, on larval lobster and plankton distribution. ICES Annual Science Conference, Theme Session Q:19. 1-11 + 6 pl.

Harding, G.C., J.D. Pringle, W.P. Vass, S. Pearre Jr., and S.J. Smith. 1987. Vertical distribution and daily movements of larval lobsters, *Homarus americanus,* over Browns Bank, Nova Scotia. Mar. Ecol. Prog. Ser. 41: 29-41.

Hardy, A.C. 1936. The continuous plankton recorder. Discovery Rep. 11: 457-510.

Harris, L.E. and R.L. Stephenson. 1999. Compilation of available information regarding the Scotian Shelf herring spawning component. Canadian Stock Assessment Research Document, 99/181.

Hurlbut, S.E., D.P. French and B.J. Taylor. 1991. Evaluation of the Potential Effects of Major Oil Spills on Grand Banks Commercial Fish Species as a Result of Impacts on Eggs and Larvae. ESRF Report Number 110, 53 p. Environmental Studies Research Funds, National Energy Board, Calgary, AB.

Hurley, P.C.F. and S.E. Campana. 1989. Distribution and abundance of haddock (*Melanogrammus aeglefinus*) and Atlantic cod (*Gadus morhua*) eggs and larvae in the waters off southwest Nova Scotia. Can. J. Fish. Aquat. Sci. 46 (Suppl. 1): 103-112

Jossi, J.W. and R.R. Marak. 1983. MARMAP plankton survey manual. NOAA Tech. Mem. NMFS-F/NEC-21. 258 p.

King, L.H. 1970. Surficial geology of the Halifax-Sable Island map area. Marine Sciences Branch, Dept. of Energy, Mines and Resources, Ottawa, Paper No. 1, 16 p.

Kohler, A.C., D.J. Faber and N.J. McFarlane. 1977. Eggs, larvae and juveniles of fishes from plankton collections in the Gulf of St. Lawrence during 1972 to 1975. Fish. Mar. Ser. Tech. Report 747, 180 pp.

Kranck, K. 1971. Surficial Geology of Northumberland Strait. Marine Science Paper 5. Geological Survey of Canada Paper 71-53. Marine Sciences Branch, Department of the Environment, Ottawa, Canada.

Lochmann, S.E., C.T. Taggart, D.A. Griffin, K.R. Thompson and G.L. Maillet. 1997. Abundance and condition of larval cod (*Gadus morhua*) at a convergent front on Western Bank, Scotian Shelf. Can. J. Fish. Aquat. Sci. 54: 1461-1479.

Longhurst, A.R., A.D. Reith, R.E. Bower and D.L.R. Seibert. 1966. A new system for the collection of multiple serial plankton samples. Deep-Sea Res. 13: 213-222.

Loring, D.H., and D.J.G. Nota. 1973. Morphology and Sediments of the Gulf of St. Lawrence. Bull. Fish. Res. Bd. Can. 182, 147 p.

Lough, R.G., W.G. Smith, F.E. Werner, J.W. Loder, F.H. Page, C.G. Hannah, C.E. Naimie, R.I. Perry, M. Sinclair and D.R. Lynch. 1994. Influence of wind-driven advection on interannual variability in cod egg and larval distributions on Georges Bank: 1982 vs 1985. ICES mar Sci. Symposium 198: 356-378.

MacLean, B. and L.H. King. 1971. Surficial geology of the Banquereau and Misaine Bank map area. Marine Sciences Branch, Dept. of the Environment, Ottawa, Marine Science Paper No. 3, 19 p.

MacLean, B., G.B. Fader and L.H. King. 1977. Surficial geology of Canso Bank and adjacent areas. Geological Survey of Canada, Marine Science Paper No. 20, 11 p.

Marti, Y.Y. 1963. Introduction. *In,* Y.Y. Marti, ed., *Soviet Fisheries Investigations in the Northwest Atlantic.* Israel Program for Scientific Translations, Jerusalem.

McLaren, I.A. and P. Avendano. 1995. Prey field and diet of larval cod on Western Bank, Scotian Shelf. Can. J. Fish. Aquat. Sci. 52: 448-463.

McLaren, I.A., P. Avendano, C.T. Taggart and S.E. Lochmann. 1997. Feeding by larval cod in different water-masses on Western Bank, Scotian Shelf. Fish. Oceanogr. 6(4): 250-265.

Messieh, S.N. and R.A. Pottle. 1986. Distribution of gillnets and spring spawning grounds of Atlantic herring in the southern Gulf of St. Lawrence as inferred from aerial surveys. Can. Tech. Rep. Fish. Aquat. Sci. No. 1504.

Miller, T.J., T. Herra and W.C. Leggett. 1995. An individual-based analysis of the variability of eggs and their newly hatched larvae of Atlantic cod (*Gadus morhua*) on the Scotian Shelf. Can. J. Fish. Aquat. Sci. 52: 1083-1093.

Mobil Oil Canada Ltd. 1983. Venture Development Project Environmental Impact Statement. Biophysical Assessment. Volume IIIa: 1-415p.

Mobil Oil Canada. 1985. Hibernia Development Project Environmental Impact Statement. Mobil Oil Canada, St. John's, Newfoundland.

Neilson, J.D. and P. Perley. 1996. Can ichthyoplankton data be used to describe spawning areas of marine fish? In, Burke, D.L, R.N. O'Boyle, P. Partington and M. Sinclair eds., Report of the second workshop on Scotia-Fundy groundfish management. Can. Tech. Rep. Fish. Aquat. Sci. 2100: vii +247p.

Oakey, G.N. 1999. Morphology map, topography/bathymetry, Atlantic region, Canada; Geological Survey of Canada, Open File 3774, November 1999; 1 sheet – 1:3,000,000. Compiled by G.N. Oakey.

O'Boyle, R.N., M. Sinclair, R.J. Conover, K.H. Mann and A.C. Kohler. 1984. Temporal and spatial distribution oficthyoplankton communities of the Scotian Shelf in relation to biological, hydrological,and physiographic features. Rapp. P.-v Reun. Cons. int. Explor. Mer, 183: 27-40.

OPEN (The Ocean Production Enhancement Network). 1995. Final Scientific Report: 1990-95.

Posgay, J.A. and R.R. Marak. 1980. The MARMAP bongo zooplankton samplers. J. Northw. Atl. Fish. Sci. 1: 91-99.

Prague, C.N., M.R. Irwin and J. Reardon. 1999. Microsoft Access 2000. Bible. IDG Books Worldwide, Inc., Foster City, California.

Reiss, C.S., A. Anis, C.T. Taggart, J.F. Dower and B. Ruddick. 2002. Relationships among vertically structured in situ measures of turbulence, larval fish abundance and feeding success and copepods on Western Bank, Scotian Shelf. Fish. Oceanogr. 11: 156-174.

Rikhter, V.A., I.K. Sigaev, V.A. Vinogradov and V.I. Isakov. 2001. Silver hake of Scotian Shelf: Fishery, environmental conditions, distribution, and biology and abundance dynamics. J. Northw. Atl. Fish. Sci. 29: 51-92.

Roff, J.C., L.P. Fanning, and A.B. Stasko. 1986. Distribution and association of larval crabs (Decapoda: Brachyura) on the Scotian Shelf. Can. J. Fish. Aquat. Sci. 43: 587-599

Ruzzante, D.E., C.T. Taggart and D. Cook. 1996. Spatial and temporal variation in the genetic composition of a larval cod (*Gadus morhua*) aggregation: cohort contribution and genetic stability. Can. J. Fish. Aquat. Sci. 53: 2695-2705.

Sable Offshore Energy Project (SOEP). 1996. Environmental Impact Statement Volume 3. Sable Offshore Energy Project.

Scott, J.S. 1983. Inferred spawning areas and seasons of groundfishes on the Scotian Shelf. Can. Tech. Rep. Fish. Aquat. Sci. 1219: iii + 14 p.

Serebryakov, V.P. 1962. Ichthyoplankton studies of the Labrador and Newfoundland areas. Pages 227-234, In, Y.Y. Marti, ed., Soviet fisheries investigations in the Northwest Atlantic, VNIRO, Moscow and PINRO, Murmansk, USSR. Israel Program for Scientific Translations. Jerusalem.

Shackell, N.L. and K.T. Frank. 2000. Larval fish diversity on the Scotian Shelf. Can. J. Fish. Aquat. Sci. 57:1747-1760.

Sherman, K. 1980. MARMAP, a fisheries ecosystem study in the Northwest Atlantic: fluctuations in ichthyoplankton-zooplankton components and their potential for impact on the system. In, Diemer, F.P., F.J. Verberg and D.Z. Mirkes.(Eds, Advanced Concepts in Ocean Measurements for Marine Biology.

Sherman, K., C. Jones, L. Sullivan, W. Smith, P. Berrien and L. Ejsymont. 1981. Congruent shifts in sand eel abundance in western and eastern North Atlantic ecosystems. Nature, 291: 486-489.

Sibunka, J.D. and M.J. Silverman. 1989. MARMAP Surveys of the continental shelf from Cape Hatteras, North Carolina, to Cape Sable, Nova Scotia (1984-87). Atlas No. 3. Summary of Operations. NOAA Technical Memorandum NMFS-F/NEC-68. 197pp

Smith, P.C., K.T. Frank and R. Mahon. 1989. General Introduction to the Southwest Nova Scotia Fisheries Ecology Program (FEP): 1982-1989. Can. J. Fish. Aquat. Sci. 46: 2-3.

Smith, P.E. and S.L. Richardson. 1977. Standard techniques for pelagic fish egg and larvae surveys. FAO Fish. Tech. Pap. No. 175. 100 p.

Smith, W.G. and W.W. Morse. 1985. Retention of larval haddock *Melanogrammus aeglefinus* in the Georges Bank region, a gyre-influenced spawning area. Mar. Ecol. Prog. Ser. 24:1-13.

Smith, W.G., M. Pennington, P. Berrien, J. Sibunka, M. Konieczna, M. Baranowski, and E. Meller.1979. Annual changes in the distribution and abundance of Atlantic cod and haddock larvae off the Northeastern United States between 1973-74 and 1977-78. ICES CM G: 47.

Spaulding, M.L., S.B. Saila, E. Lorda, H. Walker, E. Anderson and J.C. Swanson. 1983. Oil spill fishery impact assessment model: application of selected Georges Bank fish species. Estuar. Coast. Shelf Sci. 16: 511-541.

Stasko, A.B. and D.J. Gordon. 1983. Distribution and relative abundance of lobster larvae off southwestern Nova Scotia, 1977-1978. Can. Tech. Rep. Fish. Aquat. Sci. 1175: 23 p.

Stephens, R.K. and R.K. Plew. 2000. Teach Yourself SQL in 21 Days. SAMS Publishing, A Division of Macmillan, Indianapolis, USA. ISBN 0-672-31674-9.

Stephenson, R.L., M.J. Power and D.J. Gordon Jr.. 1990. Reappearance of Georges Bank (5Z) herring: A biological update. CAFSAC Res. Doc. 90/54: 38 p.

Stephenson, R.L., M.J. Power, U. Buerkle, D.J. Gordon Jr., J.B. Sochasky and W.H. Dougherty. 1990. Review of abundance indices for the 4WX herring assessment. CAFSAC Res. Doc. 90/52. 41 p.

Taggart, C., B. deYoung, I. McLaren, and A. Bowen. 1999. Production, growth, and retention of zooplankton and ichthyoplankton on Western Bank. GLOBEC-Canada Progress Report, Feb. 1999.

Templeman, W. 1966. Marine resources of Newfoundland. Fisheries Research Board of Canada, Bulletin No. 154.

Tremblay, M.J. and M. Sinclair 1992. Planktonic sea scallop larvae (*Placopecten magellanicus*) in the Georges Bank Region: broadscale distribution in relation to physical oceanography. Can. J. Fish. Aquat. Sci. 49: 1597-1615.

Tremblay, M.J. and M.M. Sinclair. 1986. The horizontal distribution of larval sea scallops (*Placopecten magellanicus*) in the Bay of Fundy, on the Scotian Shelf and on Georges Bank. NAFO SCR Doc. 86/98.

Tremblay, M.J., and M. Sinclair. 1990. Diel vertical migration of sea scallop larvae *Placopecten magellanicus* in a shallow embayment. Mar. Ecol. Prog. Ser. 67: 19-25.

Watson, F.L. and R.J. Miller. 1991. Distribution of lobster larvae on the Scotian Shelf: 1978 – 1981. Can. Tech. Rep. Fish. Aquat. Sci. 1801: 24 p.

TABLES

Table 1. Fish and invertebrate ichthyoplankton occurring in EAISSNA.

	Species Number DFO Research Surveys[1]	Common Name	Scientific Name	Information from Scotian Shelf, Bay of Fundy and Gulf of Maine
Fish Eggs and Larvae	249	Shortnose Sturgeon	Acipenser brevirostrum	*
	243	Atlantic Sturgeon	Acipenser oxyrinchus	
	599	American Sand Lance	Ammodytes americanus	*
	610	Northern Sand Lance	Ammodytes dubius	*
	611[2]	Sand Lance	Ammodytes sp.	*
	50[2]	Atlantic Wolffish	Anarhichas lupus	*
	52	Northern Wolffish	Anarhichas denticulatus	
	58	Striped Anchovy	Anchoa hepsetus	
	N07	Ocellated Flounder	Ancylopsetta sp.	*[3]
	600[2]	American Eel	Anguilla rostrata	*
	160	Atlantic Argentine	Argentina silus	*
	880	Atlantic Hookear	Artediellus atlanticus	
	306	Snowflake Hookear	Artediellus uncinatus	
	340[2]	Alligatorfish	Aspidophoroides monopterygius	*
	N01	Mackerel	Auxis sp.	
	157[2]	Glacier Lanternfish	Benthosema glaciale	*
	196[2]	Lefteye Flounder	Bothidae	*
	45	Eyed Flounder	Bothus ocellatus	*
	8[2]	Flounder	Bothus sp.	*
	164	Atlantic Menhaden	Brevoortia tyrannus	*
	15[2]	Cusk	Brosme brosme	*
	657	Dragonet	Callionymus sp	*
	N08	Cuckoofish/Boarfish	Capros aper	*[3]
	121	Black Sea Bass	Centropristis striata	
	163[2]	Horned Lanternfish	Ceratoscopelus maderensis	*
	293	Lanternfish	Ceratoscopelus sp.	*
	44	Gulf Stream Flounder	Citharichthys arctifrons	*
	60[2]	Atlantic Herring	Clupea harengus	*
	312	Sculpins	Cottidae	*
	630[2]	Wrymouth	Cryptacanthodes maculatus	*
	514	Snailfish	Cyclopteridae	*
	501	Lumpfish	Cyclopterus lumpus	*
	103	Weakfish	Cynoscion regalis	
	754[2]	Brauers Anglemouth	Cyclothone braueri	*
	154[2]	Veiled Anglemouth	Cyclothone microdon	*
	755[2]	Anglemouth	Cyclothone sp.	*
	114[2]	Fourbeard Rockling	Enchelyopus cimbrius	*
	34	Anchovies	Engraulidae	
	9	Silver Anchovy	Engraulis eurystole	
	386	Smallmouth Flounder	Etropus microstomus	*
	10[2]	Atlantic Cod	Gadus morhua	*
	1242	Cod/Witch	Gadus/Glyptocephalus	*
	41[22]	Witch Flounder	Glyptocephalus cynoglossus	*
	804[2]	Gobies Unidentified	Gobiidae	*

Table 1. Fish and invertebrate ichthyoplankton occurring in EAISSNA.

	Species Number DFO Research Surveys[1]	**Common Name**	**Scientific Name**	**Information from Scotian Shelf, Bay of Fundy and Gulf of Maine**
Fish Eggs and Larvae (cont.)	302	Arctic Staghorn Sculpin	Gymnocanthus tricuspis	
	320[2]	Sea Raven	Hemitripterus americanus	•
	1094	Fourspot Flounder	Hippoglossina oblonga	•
	40[2]	American Plaice	Hippoglossoides platessoides	•
	30	Atlantic Halibut	Hippoglossus hippoglossus	•
	134	Benoit's Lanternfish	Hygophum benoiti	
	318[2]	Sculpin	Icelus sp.	•
	36[2]	Wrasses	Labridae	•
	252[2]	Lampanyctus sp.	Lampanyctus sp.	•
	270	Spot Croaker	Leiostomus xanthurus	
	N02	Cusk Eel-Lepophidium	Lepophidium profundorum	
	N03	Shanny	Leptoclinus maculatus	
	42	Yellowtail Flounder	Limanda ferruginea	•
	503[2]	Atlantic Seasnail	Liparis altanticus	•
	513	Gulf Seasnail	Liparis coheni	•
	508[2]	Inquiline Seasnail	Liparis inquilinus	•
	500[2]	Seasnail	Liparis spp.	•
	400[2]	American Angler, Monkfish, Goosefish	Lophius americanus	•
	25	Tilefish	Lopholatilus chamaeleonticeps	
	645	Shanny unidentified.	Lumpenidae	•
	622[2]	Snake Blenny	Lumpenus lumpretaeformis	•
	640	Ocean Pout	Macrozoarces americanus	•
	64[2]	Capelin	Mallotus villosus	•
	158	Muller's Pearlside	Maurolicus muelleri	•
	11[2]	Haddock	Melanogrammus aeglefinus	•
	770	Atlantic Silverside	Menidia menidia	
	19[2]	Offshore Hake	Merluccius albidus	•
	14[2]	Silver Hake	Merluccius bilinearis	•
	17	Atlantic Tomcod	Microgadus tomcod	•
	258	Atlantic Croaker	Micropogonias undulatus	
	N05	Lemon Sole	Microstomus microcephalus	
	150[2]	Lanternfish	Myctophidae	•
	180	Spotted Lanternfish	Myctophum punctatum	
	303[2]	Little Grubby	Myoxocephalus aenaeus	•
	300[2]	Longhorn Sculpin	Myoxocephalus octodecemspinosus	•
	301[2]	Shorthorn Sculpin	Myoxocephalus scorpius	•
	310	Sculpin	Myoxocephalus spp.	•
	727[2]	White Barracudina	Notolepis rissoi	•
	729	Omosudis lowei	Omosudis lowei	•[3]
	609	Snake Eel	Ophichthus cruentifer	
	451[2]	Shrimp Eel	Ophichthus gomesi	•
	649[2]	Cusk Eel	Ophidiidae	•

Table 1. Fish and invertebrate ichthyoplankton occurring in EAISSNA.

	Species Number DFO Research Surveys[1]	**Common Name**	**Scientific Name**	**Information from Scotian Shelf, Bay of Fundy and Gulf of Maine**
Fish Eggs and Larvae (cont.)	N06	Cusk Eel-Ophidion	Ophidion marginatum	
	63	Rainbow Smelt	Osmerus mordax	
	674[2]	Paralepis coregonoides	Paralepis coregonoides	*
	713[2]	Barracudinas	Paralepididae	*
	141	Summer Flounder	Paralichthys dentatus	*
	142	Fourspot Flounder	Paralichthys oblongus	*
	701[2]	Butterfish	Peprilus triacanthus	*
	240	Sea Lamprey	Petromyzon marinus	
	621[2]	Rock Gunnel	Pholis gunnellus	*
	16[2]	Pollock	Pollachius virens	*
	81	Bluefish	Pomatomus saltatrix	
	330	Northern Searobin	Prionotus carolinus	
	329	Searobins	Prionotus spp.	
	226[2]	Protomyctophum arcticum	Protomyctophum arcticum	*
	43[2]	Winter Flounder	Pseudopleuronectes americanus	*
	203	Little Skate	Raja erinacea	*
	204	Winter Skate	Raja ocellata	*
	201	Thorny Skate	Raja radiata	*
	202	Smooth Skate	Raja senta	*
	211	Skate	Raja sp.	*
	70[2]	Atlantic Mackerel	Scomber scombrus	*
	720[2]	Atlantic Saury, Needlefish	Scomberesox saurus	*
	143[2]	Windowpane	Scophthalmus aquosus	*
	283[2]	Labrador Redfish	Sebastes fasciatus	*
	20	Golden Redfish	Sebastes marinus	*
	21	Deep-water Redfish	Sebastes mentella	
	23[2]	Redfish	Sebastes sp.	*
	220	Spiny Dogfish	Squalus acanthias	
	624[2]	Arctic Shanny	Stichaeus punctatus	*
	159	Boa Dragonfish	Stomias boa ferox	*
	339	Lizardfish	Synodontidae	*
	53	Tautog	Tautoga onitis	*
	122[2]	Cunner	Tautogolabrus adspersus	*
	791	Smalleye Squaretail	Tetragonurus cuvieri	*
	71	North Atlantic Tuna	Thunnus thynnus	
	892	Ribbonfishes	Trachipteridae	
	304	Mailed Sculpins	Triglops murrayi	
	625[2]	Radiated Shanny	Ulvaria subbifurcata	*
	N04	Long-finned Hake	Urophycis chesteri	*
	13[2]	Red Hake	Urophycis chuss	*
	111	Spotted Hake	Urophycis regia	
	193	Hake	Urophycis sp.	*
	12[2]	White Hake	Urophycis tenuis	*
	72	Swordfish	Xiphias gladius	

Table 1. Fish and invertebrate ichthyoplankton occurring in EAISSNA.

	Species Number DFO Research Surveys[1]	**Common Name**	**Scientific Name**	**Information from Scotian Shelf, Bay of Fundy and Gulf of Maine**
Fish Eggs and Larvae—Miscellaneous General Categories (VDC)	35[2]	Hake	Merluccius sp.	•
	49[2]	Flounder Unidentified	Pleuronectidae	•
	90[2]	Unidentified Fish	Unid. Fish (larvae/juveniles)	•
	101[2]	Gadoids	Gadoidea	•
	195[2]	Rockling/Hake	Enchelyopus /Urophycis eggs	•
	290[2]	Herring/Capelin-like Eggs	Clupeidae/Osmeridae-like Eggs	•
	645[2]	Shanny Unidentified	Lumpenidae	•
	1200	Fish Eggs	Fish Eggs	•
	1211[2]	Cod Eggs	Gadus morhua eggs	•
	1212[2]	Haddock Eggs	Melanogrammus eggs	•
	1222[2]	Plaice Eggs	Hippoglossoides eggs	•
	1223[2]	Mackerel eggs	Scomber eggs	•
	1227[2]	Witch Eggs	Glyptocephalus eggs	•
	1229[2]	Fourbeard Rockling Eggs	Enchelyopus cimbrius eggs	•
	1230[2]	Yellowtail Eggs	Limanda ferruginea eggs	•
	1232[2]	Cunner Eggs	Tautogolabrus eggs	•
	1235[2]	Cusk Eggs	Brosme eggs	•
	1236[2]	Hake/ Fourbeard Rockling/ Butterfish/ Windowpane	Urophycis/Merluccius/ Enchelyopus/Peprilus/ Scophthalmus	•
	1237[2]	Cod/Haddock Eggs	Gadus/Melanogrammus Eggs	•
	1238[2]	Angler/Monkfish Eggs	Lophius americanus eggs	•
	1239[2]	Silver Hake Eggs	Merluccius bilinearis eggs	•
	1241[2]	Silver Hake/ Longfinned Hake/ Fourbeard Rockling Eggs	Merluccius/ Urophycis chesteri/ Envhelyopus eggs	•
	1243[2]	Cusk/Mackerel Eggs	Brosme/Scomber eggs	•
	1244[2]	Cunner/Yellowtail Eggs	Tautogolabrus/Limanda eggs	•
	1245[2]	Offshore Hake Eggs	Merluccius albidus eggs	•
	1246[2]	Hake Eggs	Urophycis eggs	•
	1247[2]	Pollock Eggs	Pollachius eggs	•
	1249[2]	Brill/Windowpane Eggs	Scophthalmus eggs	•
	1250[2]	Gulf Stream Flounder Eggs	Citharichthys eggs	•
	1253[2]	Winter Flounder eggs	Pseudopleuronectes eggs	•
	1297	Fish Larvae	Fish Larvae	•
INVERTEBRATES	2511	Jonah Crab	Cancer borealis	•
	2513	Atlantic Rock Crab	Cancer irroratus	•
	2524	Crab	Cancer spp.	•
	2351	Green crab	Carcinus maenas	•
	2526	Snow crab	Chionoecetes opilio	•
	2352	Deep Sea Red Crab	Geryon quinquidens	•
	2550	American, Northern Lobster	Homarus americanus	•

Table 1. Fish and invertebrate ichthyoplankton occurring in EAISSNA.

	Species Number DFO Research Surveys[1]	**Common Name**	**Scientific Name**	**Information from Scotian Shelf, Bay of Fundy and Gulf of Maine**
INVERTEBRATES (cont).	2527	Toad Crab	Hyas araneus	*
	2521	Lesser Toad Crab	Hyas coarctatus	*
	2520	Crab	Hyas spp.	*
	4511	Short-finned Squid	Illex illecebrosus	*
	4515	Squid	Illex spp.	
	4512	Long-finned Squid	Loligo pealei	*
	4541	Squid	Loligo sp.	
	2611	Krill	Meganyctiphanes norvegica	
	2211	Northern Shrimp	Pandalus borealis	*
	4321	Sea Scallop	Placopecten magellanicus	*
	2620	Krill	Thysanoessa spp.	

[1] Species numbers having an "N" prefix were not already assigned species numbers in the research survey database.

[2] Species occurring in SSIP/FEP datasets in more than five sets per study period.

[3] Species occurred on the continental slope or deeper.

Table 2. Sample catalog output of searches on species and geographic features in the main tables in EAISSNA. This search covers Atlantic Cod on Browns Bank, except for the search for polygon records, which uses "Atlantic herring" and "Scotian Shelf" as search criteria. Reports necessary to produce these outputs (entitled "CATALOG OUTPUT…") are found on the EAISSNA CD.

Citation	Source Level	Type of Record	Stage	Activity	Secondary Source	Presentation Type	Record
DATA RECORDS							
Berrien and Sibunka 1999	Primary	Seasonal Report	Egg	Early	MARMAP	--	1882
Brander and Hurley 1992	Primary	Seasonal Report	Adult	Spawning	SSIP	--	466
Breeze et al. 2002	Secondary	Seasonal Report	Adult	Spawning	Scott 1983	--	571
Campana et al. 1989	Primary	Seasonal Report	Egg	Early	FEP	--	675
Campana et al. 1989	Primary	Seasonal Report	Larvae	Early	FEP	--	676
Colton et al. 1979	Primary	Seasonal Report	Adult	Spawning	National Marine Fisheries….	--	695
MAPS/GRAPHICS RECORDS							
Berrien and Sibunka 1999	--	Occurrence	Egg	Early	--	Contour Abundance	501
Berrien and Sibunka 1999	--	Occurrence	Egg	Early	--	Contour Abundance	502
Berrien and Sibunka 1999	--	Occurrence	Egg	Early	--	Contour Abundance	503
.							
.							
Campana et al. 1989	--	Occurrence	Egg	Early	--	Other	936
Campana et al. 1989	--	Occurrence	Larvae	Early	--	Other	937
Frank et al. 1994	--	Occurrence	Egg	Early	--	Contour Abundance	218
Frank et al. 1994	--	Occurrence	Egg	Early	--	Contour Abundance	902
Scott 1983	--	Occurrence	Adult	Spawning	--	Scaled Symbols	855
POLYGON RECORDS							
Colton and Temple 1961	Primary	Occurrence	Adult	Spawning	--	Area Map	202
Haegele and Schweigert 1985	Primary	Occurrence	Adult	Spawning	--	Area Map	44
Lough et al. 1982	Primary	Occurrence	Larvae	Early	--	Area Map	35
Sameoto 1972	Primary	Occurrence	Larvae	Early	--	Contour Abundance	24
Stephenson and Kornfield 1990	Primary	Occurrence	Adult	Spawning	--	Area Map	160
Stewart and Arnold	Primary	Occurrence	Adult	Spawning	--	Area Map	163
VDC POLYGON RECORDS							
Stewart et al. 2003	Primary	Abundance Data	Egg	--	SSIP	Contour Percentile	3494
Stewart et al. 2003	Primary	Abundance Data	Egg	--	SSIP	Contour Percentile	3499
Stewart et al. 2003	Primary	Abundance Data	Egg	--	SSIP	Contour Percentile	3504
Stewart et al. 2003	Primary	Abundance Data	Juvenile	--	SSIP	Contour Percentile	350
Stewart et al. 2003	Primary	Abundance Data	Larvae	--	SSIP	Contour Percentile	315
Stewart et al. 2003	Primary	Abundance Data	Larvae	--	SSIP	Contour Percentile	320
Stewart et al. 2003	Primary	Abundance Data	Larvae	--	SSIP	Contour Percentile	335
Stewart et al. 2003	Primary	Abundance Data	Larvae	--	SSIP	Contour Percentile	340
Stewart et al. 2003	Primary	Abundance Data	Larvae	--	SSIP	Contour Percentile	380
Stewart et al. 2003	Primary	Abundance Data	Larvae	--	SSIP	Contour Percentile	385
.							

APPENDICES

APPENDIX A – METADATA FOR EAISSNA DATABASE[22]

Identification_Information:

Citation:

Citation_Information:

Originator: Marine Fish Division, Fisheries and Oceans Canada, Dartmouth, Nova Scotia, Canada.

Originator: Government of Canada, National Energy Board, Environmental Studies Research Funds (ESRF), Calgary, Alberta, Canada.

Originator: Envirosphere Consultants Limited, Windsor, Nova Scotia, Canada.

Publication_Date: 2003

Title: Stewart, P.L., R.M Branton, G.A. Black, H.A. Levy and T.L. Robinson. 2003. EAISSNA - An Electronic Atlas of Ichthyoplankton on the Scotian Shelf of North America. Can. Tech. Rep. Fish. Aquat. Sci. 2514: vii + 179 pp.

Geospatial_Data_Presentation_Form: georeferenced point data; vector digital data

Description:

Abstract: The EAISSNA database contains information on location and time of spawning, and abundance and distribution of eggs and larvae of marine fish on the Scotian Shelf of North America. 197 scientific publications from 1919 to 2001 were reviewed and original analysis conducted on datasets from Department of Fisheries and Oceans (DFO) Scotian Shelf Ichthyoplankton Program (SSIP) and Fisheries Ecology Program (FEP) for 1976-82 from data archives, providing information on 107 taxa of fish and invertebrates. The database is intended for use in environmental assessment and management activities associated with offshore hydrocarbon development and production and ocean management. Supporting maps and database tables, and possible enhancements and developments including standards based World Wide Web (WWW) access are also described. Compact Disks (CD) (report, lists, maps and data) can be obtained from the authors.

Purpose: The database provides georeferenced information on distribution and seasonality of fish eggs and larvae, an important component of the ecosystem of the Canadian continental shelf. It is used by environmental managers, the oil industry and fisheries researchers.

Supplemental_Information:

The database will reside on the Fisheries and Oceans Canada, Marine Fish Division Vitrual Data Centre (VDC),which supports access and searches, as well as manipulation and visualization.

The database includes new summary analyses of geospatial data from the Scotian Shelf Ichthyoplankton Program (SSIP) and Fisheries Ecology Program (FEP) and displays the information as electronic images (Microsoft portable network graphics format(PNGs) as well as vector representations (MapInfo Professional, MID/MIF transfer format).

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1954

Ending_Date: 2003

---

[22] US Federal Geospatial Data Committee (FGDC) Content Standard for Digital Geospatial Metadata, Content Standard for National Biological Information Infrastructure Metadata, FGDC Biological Data Profile of the Content Standard for Digital Geospatial Metadata.

```
    Currentness_Reference: Compiled in, and most recent analysis conducted in
 2003.
   Status:
     Progress: Complete
     Maintenance_and_Update_Frequency: As needed
   Spatial_Domain:
     Bounding_Coordinates:
       West_Bounding_Coordinate: -80.00
       East_Bounding_Coordinate: -33.5
       North_Bounding_Coordinate: 55
       South_Bounding_Coordinate: 20
   Keywords:
     Theme:
       Theme_Keyword_Thesaurus: none
       Theme_Keyword: marine fish eggs
       Theme_Keyword: marine fish larvae
       Theme_Keyword: marine fish spawning
       Theme_Keyword: seasonality
       Theme_Keyword: distribution
     Place:
       Place_Keyword_Thesaurus: none
       Place_Keyword: Scotian Shelf
       Place_Keyword: Eastern Canadian continental shelf and slope
       Place_Keyword: Gulf of Maine
       Place_Keyword: Bay of Fundy
       Place_Keyword: Georges Bank
     Stratum:
       Stratum_Keyword_Thesaurus: none
       Stratum_Keyword: water column
       Stratum_Keyword: seabed
   Data_Set_Credit: Robert Branton, Jerry Black, Peter Hurley, Mark Fowler,
 Patrick Stewart, Heather Levy, Tracy Robinson
   Temporal:
     Temporal_Keyword_Thesaurus: none
     Temporal_Keyword: twentieth century
   Taxonomy:
     Keywords/Taxon:
       Taxonomic_Keyword_Thesaurus: none
       Taxonomic_Keywords: fish
       Taxonomic_Keywords: molluscs
       Taxonomic_Keywords: decapods
       Taxonomic_Keywords: crustacea
     Information:
   Access_Constraints: Basic MSAccess database distributed as CD; accessible
 in Oracle on Fisheries and Oceans Canada (DFO), Marine Fish Division Virtual
 Data Centre on DFO Intranet, with permission.
   Use_Constraints: These include any use constraints applied to assure the
 protection of privacy or intellectual property, and any special restrictions
 or limitations on using the data set.
   Point_of_Contact:
     Contact_Information:
       Contact_Person_Primary:
         Contact_Person: Robert Branton
         Contact_Organization: Marine Fish Division, Fisheries and Oceans
 Canada.
       Contact_Address:
         Address_Type: Mailing
```

Address:
Bedford Institute of Oceanography
P.O. Box 1006
City: Dartmouth
State_or_Province: Nova Scotia
Postal_Code: B2Y 4A2
Country: Canada
Browse_Graphic:
Browse_Graphic_File_Name: F7-SSIP.png
Browse_Graphic_File_Name: F57-FEP.png
Browse_Graphic_File_Description:
F7-SSIP.png - Station locations for Scotian Shelf Ichthyoplankton Program (SSIP). 1976-82.
Browse_Graphic_File_Description:
F57-FEP.png - Station locations for Fisheries Ecology Program, Fisheries and Oceans Canada, 1983-85.
Browse_Graphic_File_Type: "PNG"
Security_Information:
Security_Classification_System: none
Native_Data_Set_Environment: Fisheries and Oceans Canada, Marine Fish Division, key hardware components are the DFO intranet, Oracle Databases & Web Application Servers, in-house ACON (A CONtouring System) data visualization system and Splus Statserver, MapInfo Professional Version 7, MSAccess 2000, Primary programming languages are: HTM, SQL, PL/SQL, C++, and Splus.
Data_Quality_Information:
Attribute_Accuracy:
Attribute_Accuracy_Report:

Information is present as data (e.g. numbers, dates); descriptions (e.g. time or season of spawning); scans of maps or graphics contained in scientific publications; polygons from scanned maps digitized in MapInfo GIS and stored in native format or in map interchange (MID/MIF) format; polygons generated in ACON Software from fish egg and larvae data from the Fisheries Ecology and Scotian Shelf Ichthyoplankton Programs and produced in MapInfo GIS native format or in map interchange (MID/MIF) format.

DATA and DESCRIPTIONS entered in the database are double-checked against the source data at the time of entry. Approximately 5 % of records are further checked to ensure accuracy of data entry.

SCANNED maps (stored as portable network graphics, PNGs) are not further checked, except indirectly when references to the graphics are entered in the database.

POLYGONS digitized into MAPInfo and transfer formats from scanned maps typically have registration errors of 0-1 pixels.

POLYGONS in MAPInfo and map interchange formats, and portable network graphics produced by ACON software typically have no translation error but have a resolution accuracy of the grid spacing used for the surveys, frequently 15-20 km.

Quantitative_Attribute_Accuracy_Assessment:
Attribute_Accuracy_Value: DATA = 100%
Attribute_Accuracy_Value: SCANNED GRAPHICS = 100%
Attribute_Accuracy_Value: DIGITIZED POLYGONS = REGISTRATION ERROR 0-1 PIXELS.
Attribute_Accuracy_Value: POLYGONS GENERATED BY ACON FROM DATA = 100%
Logical_Consistency_Report: none
Lineage:
Methodology:
Methodology_Type: computer analysis of point abundance data

Methodology_Type: summary of descriptive data contained in source documents
Methodology_Type: literature search
Source_Information:
Source_Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 1954
Ending_Date: 2003
Source_Currentness_Reference: 2003
Source_Citation_Abbreviation: Stewart et al. 2003
Source_Contribution: Analysis of two ichthyoplankton datasets (Scotian Shelf Ichthyoplankton Program and Fisheries Ecology Program) by Fisheries and Oceans Canada, to produce monthly and annual distribution, contoured abundance, and scaled symbol plots for the Scotian Shelf.
Completeness Report: All maps showing spawning areas, distributions of fish eggs and larvae, contour maps of fish egg and larvae abundance are included either as scans (PNG format) and/or map interchange format (MID/MIF). All maps scanned for the purposes of digitizing are retained in the database in PNG format. Outer bathymetric contours (100 m) for all regions referenced in the database are included.
Spatial_Data_Organization_Information:
Indirect_Spatial_Reference: data is referenced and can be searched by name of seabed feature included in a table in the database.
Indirect_Spatial_Reference: a table containing digitized seabed features allows searches for georeferences to locate polygons and identify features, allowing records to be located by searches of feature names.
Direct_Spatial_Reference_Method: point data is referenced by latitude and longitude fields.
Direct_Spatial_Reference_Method: rasters (scans) of maps are accessed by searches for georeferences which are in boundaries of maximum and minimum latitude and longitude for the rasters.
Direct_Spatial_Reference_Method: vector data (polygons) are stored in MID/MIF interchange format which can be searched to locate polygons in which a sought after georeference occurs.
Direct_Spatial_Reference_Method: maximum and minimum extent of vector data (polygons) are stored, allowing searches for georeferences in the proximity of the polygons.
Spatial_Reference_Information:
Horizontal_Coordinate_System_Definition:
Geographic:
Geographic_Coordinate_Units: Decimal degrees
Planar:
Map_Projection:
Other_Projection's_Definition: Latitude, Longitude
Entity_and_Attribute_Information:
Distribution_Information:
Distributor:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Robert Branton
Contact_Organization: Fisheries and Oceans Canada, Marine Fish Division, Bedford Institute of Oceanography, Dartmouth, Nova Scotia
Contact_Position: Senior Assessment Biologist
Contact_Address:
Address_Type: Postal Location
Address: PO Box 1006

```
        City: Dartmouth
        State_or_Province: Nova Scotia
        Postal_Code: B0N 2A0
        Country: Canada
Metadata_Reference_Information:
  Metadata_Date: July 22, 2003
  Metadata_Contact:
    Contact_Information:
      Contact_Person_Primary:
        Contact_Person: Patrick Stewart
        Contact_Organization: Envirosphere Consultants Limited
  Metadata_Standard_Name: FGDC Content Standard for Digital Geospatial
Metadata, Content Standard for National Biological Information Infrastructure
Metadata, FGDC Biological Data Profile of the Content Standard for Digital
Geospatial Metadata
```

APPENDIX B – TECHNICAL DETAILS

B.1 Standardization and Metadata

Several database standards for geospatial datasets were consulted during development of EAISSNA to ensure it could be made as compatible as possible with existing systems. The database is unique compared to other databases in having a broad range of information and sources, and not being primarily a source of georeferenced primary data, such as point data or polygons. Consequently there was little which could be standardized in terms of the field names, number of tables, kinds of tables etc.; however the level of standardization even in existing geospatial databases varies significantly, and those we examined were not standardized at the level of field names. Another novel feature of EAISSNA is that information necessary to define boundaries of polygons in the contour plots is stored in MID/MIF map interchange format in fields in the database.

Metadata[23] for EAISSNA follows the format of the U.S. Federal Geographic Data Committee (FGDP)[24] and is compatible with the Canadian Geospatial Infrastructure (CGDI)[25]. Several metadata formats were reviewed in selecting this format. Organizations which deal with geospatial information include those whose primary objective is to provide *metadata standards*; and clearinghouses which are primarily databases.

Three *metadata standards* providers were reviewed: the United States - Federal Geographic Data Committee (FGDC), the Canadian Geospatial Data Infrastructure (CGDI) through Geoconnections Canada[26]- which has adopted the FGDC metadata standard, and the European, Access to Biological Collection Data (ABCD) Metadata Schema[27]. The *global clearinghouses* for marine species information which were reviewed, included: the Ocean Biogeographic Information System (OBIS)[28]; the European Global Biodiversity Information Facility (GBIF)[29]; and the Biodiversity Collection Access Service for Europe (BIOCASE)[30]. Basic metadata describing the database (following the FGDC structure) is presented in Appendix A.

B.2 Naming and Numerical Conventions

Latitude and Longitude—Latitude and longitude is presented in two ways in the database, reflecting different purposes. For point data, latitude and longitude is presented in degrees and decimal minutes (three or less decimal places) which is the convention used in all the maps consulted and is the presentation with which most users are familiar. The fields "*Lat_deg*",

---

[23] Metadata is information about the database, such as who originated it, what it contains, its structure, accessibility, availability etc.

[24] http://www.fgdc.gov

[25] http://www.geoconnections.org

[26] http://www.geoconnections.org

[27] http://www.bgbm.org/TDWG/CODATA/Schema/default.htm

[9] http://www.iobis.org/

[29] http://www.gbif.org/

[30] http://www.biocase.org/

"*Lat_min*", "*Long_deg*" and "*Long_min*" are filled in this way. Latitude and longitude coordinates in fields intended for routine searching (e.g. "*max_lat*", "*min_lat*", "*max_long*", and "*min_long*", as well as all the coordinates for polygon information generated in MapInfo or by the DFO VDC, are in decimal degrees, with the further convention that longitude is expressed as a negative number (e.g. 45.234, -67.456) which is the convention used in Geographic Information Systems.

B.3. Production of Digital Maps and Graphics

B.3.1 Maps from Publications

Graphics selected from publications for inclusion in the database were typically first scanned on a Hewlett-Packard flatbed scanner (resolution of 300 dpi, but occasionally 600-1200 dpi depending on the detail of the map or graphic) to produce TIF graphics files. The TIFs were used for further tracing of polygons using MapInfo GIS after registering based on coordinates contained in the map (registration accuracy typically 0-1 pixels). Subsequently all TIF images were converted to portable network graphic format (PNG) with the "no interlacing" option for storage in the database.

Various files associated with a map or polygon in MapInfo format (including several files containing specifications, as well as the TIF and PNG files from the digitization process) were organized in a subdirectory unique to, and with the identifier number for, that map, and which contained MapInfo files for all component layers of contour maps. The PNG file associated with the map, as well as all other PNG files, were stored in one directory on the host computer, and are stored in the same file structure on the database CD.

Maps digitized in MapInfo were given identifier numbers as follows:

- Maps showing eggs and larvae distributions and spawning areas, including contour plots and scaled symbol plots, were named as follows, typically with a "PNG" extension:

  "F85-200-1-3.png" represents:

  F85 - Source Number
  200 - DFO commercial species code or, if no commercial code was available, the DFO research survey code followed by an "R" (e.g. 200 = Atlantic Herring; 340R = Alligatorfish);
  1 - stage (1=egg; 2=larvae; 3=juvenile; 4=adult)
  3 - month (3=March).

- Maps showing spawning areas or beds have the reference and species designation as above but have a stage of 4 (adult) and a code of "sp" (e.g. F85-200-4-sp);
- Graphics in several different types were also included and they are coded in a free form, which includes the source number (e.g. F85), but also a part which indicates what they are (e.g. "F85-area.png" represents a map of the study area for that source document);

- Polygons which represent geographic features have the name of the feature stated which may or may not be followed by the word "area" (e.g. "Georges Bank area.png"); and
- MapInfo files, including associated tables and MID/MIF map interchange format[31] (Figure B1), are stored in the database under subdirectories having the name of the file.

Figure B1. Sample files in MapInfo Map Interchange Format, for the contour map in Figure 7.

F7-172-1-08.mid

```
">100","numbers/m2"          All abundances in the three polygons
">100","numbers/m2"          in the MapInfo layer are > 100 ind./m2
">100","numbers/m2"
```

F7-172-1-08.mif

```
Version 300
Charset "WindowsLatin1"
Delimiter ","
CoordSys Earth Projection 1, 0
Columns 2
  contour_lower Char(25)     Field in MapInfo Table contains " > 100"
  units Char(25)             Field contains "numbers/m2"
Data

Pline 64                     First Contour Level
-60.587814 44.003166         Negative longitude; latitude.
.
.
-60.587814 44.003166
   Pen (1,2,0)

Pline 25                     Second Contour Level
-58.487776 44.362434
-58.510442 44.36941
.
.
-58.216389 44.508932
-58.216709 44.481028
.                            etc.
.
-58.487776 44.362434
   Pen (1,2,0)               End
```

Occasionally maps/graphics were available in digital form. Contour maps of cod egg and larval distribution for Lough *et al.* (1994) were provided by the US National Marine Fisheries Service in original PCX format. These were used after registration in MapInfo to produce polygons of abundance and distribution of cod eggs on Georges Bank and off southwestern Nova Scotia, and were subsequently converted to PNG format for further use in the database. Polygons of traditional spawning distributions for the Bay of Fundy (Graham et al. 2002) were provided as Arcview 'shape' files by the Centre for Community-Based Management, St. Francis Xavier University, Antigonish, N.S. Bitmaps (PNGs) and MapInfo and map interchange polygon files arising from DFO Virtual Data Center's analysis of SSIP and FEP data, were provided in digital format (see next section*)*.

---

[31] The map interchange format for MapInfo consists of two ASCII text files, one of which contains 'attribute' information for polygons (file extension *.MID); and one which contains basic MapInfo mapping information (MapInfo Version, projection etc. as well as coordinates for the points that circumscribe the polygons (Figure 10).

B.3.2 Production of Maps and Graphics from SSIP and FEP Data

B.3.2.1 Abundance Estimates and Mapping

Appropriate outputs (scaled symbol and cumulative ranked abundance percentile maps) were produced by one of the authors (J. Black) using the VDC ACON and data from the SSIP/FEP surveys. Maps are contained on the EAISSNA CD in the "Graphics VDC" directory, where an HTML index is provided to assist in reviewing them. SSIP/FEP data sets were initially screened to determine species present in an adequate number of sets (cutoff level was the occurrence of a species/stage in a minimum of 5 sets) to provide meaningful presentation of abundance and distribution. Georeferenced datasets from SSIP and FEP include total number of individuals for each species and stage in the net tow, the volume sampled, depth of tow, type of tow (gear), as well as additional information such as side of ship the tow was made on, position of the net in the bongo pair, etc. and cruise date. From this information, the respective average number/set was estimated and converted to appropriate value per unit area or volume through knowledge of factors such as depth or trajectory of the tow; gear type and performance; and experience from previous analysis of these datasets (based on tow volume and depth parameters), by month and annual average. DFO researchers familiar with the datasets (P. Hurley and M. Fowler) reviewed the approach to ensure the result reflected subtleties of the data set (e.g. availability or absence of particular gear on cruises; peculiarities of types of flow meters; discrepancies between pairs of bongo nets etc).

All stations/sets occupied in the selected month generated point values for total number/set, number per unit volume, and number of replicates. These were presented by the ACON software as: 1) scaled symbol plots of abundance per unit area (Figure B2); and 2) contoured plots of cumulative ranked abundance percentile (Figure B3, Section B3.2.2 below). For the latter, all tows for the period to be summarized, are ordered in ascending abundance of organisms per tow or per square metre, and the cumulative percentage is calculated. Each abundance (the value for individual tows) has a corresponding cumulative % value, which is contoured, after conversion to an appropriate number per unit volume. The approach gives a better representation of areas of actual distribution than contoured abundance, and when reviewed the map of scaled symbols gives a good representation of distribution and abundance of the eggs and larvae. Maps also contained a boundary line which outlines the area for which data were available.

The numeric outputs and boundaries of polygons and polygon attributes from the contour percentile plots (which were also written as a series of latitude/longitude points in MID/MIF map interchange format) were placed in a tab-delimited text file and subsequently imported into MSAccess.

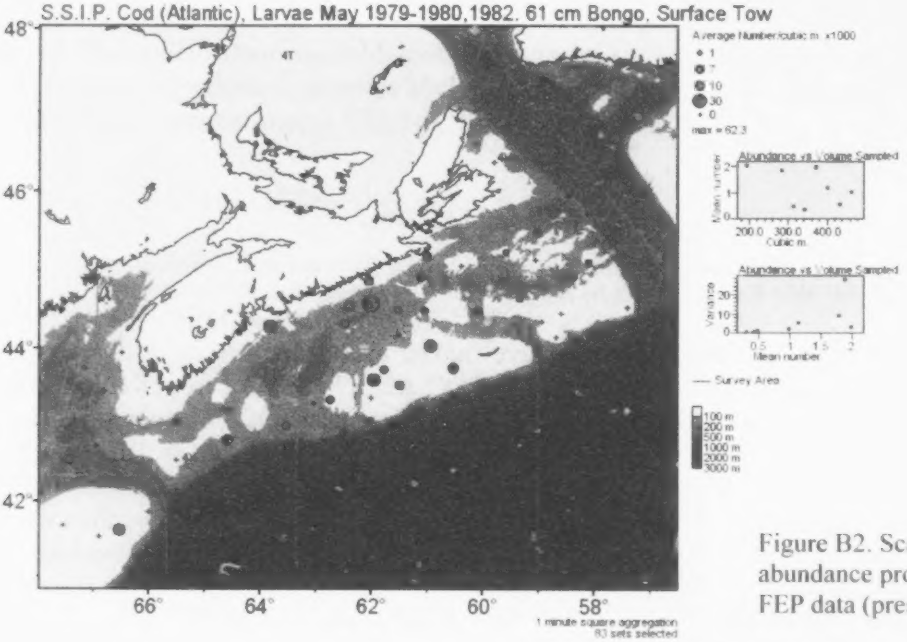
S.S.I.P. Cod (Atlantic), Larvae May 1979-1980,1982. 61 cm Bongo. Surface Tow
48°
46°
44°
42°
66°
64°
62°
60°
58°
4T
Average Number/cubic m x1000
1
7
10
30
0
max = 62.3
Abundance vs Volume Sampled
Mean number
2
1
0
200.0
300.0
400.0
Cubic m.
Abundance vs Volume Sampled
Variance
20
10
0
0.5
1
1.5
2
Mean number
Survey Area
100 m
200 m
500 m
1000 m
2000 m
3000 m
1 minute square aggregation
83 sets selected

Figure B2. Scaled symbol plot of larval abundance produced from SSIP and FEP data (present study).

Each file generated through ACON from SSIP and FEP datasets was given a code as follows:
F183-4321R-1-5-1-3-2-3 represents

F183-source reference of the present study
4321R-species number, DFO research surveys
1-stage (1=eggs)
5-month (5=May)
1-survey, either SSIP=1 or FEP=2
3-gear type[32]
2-abundance measure (always 3)
3-plot type[33]

B.3.2.2 Percentile Mapping — Cumulative Rank Abundance Percentile Plots

The DFO, Marine Fish Division ACON/VDC has developed an approach to generate plots of cumulative rank abundance percentile, which display in the form of contour plots in which the contours represent percentile points on the ranked cumulative abundance curve.[34] This approach has been used in presentations of ichthyoplankton information generated from SSIP and FEP survey data (Figures B4 & 8). Maps of CRA% show contours of the percentiles (25, 50, and 75%) and the map includes a key showing the ranked cumulative abundance curve (Figure 8) and an outline which shows the area for which data were available.

---

[32] 1 = 1 meter net, surface tow; 2 = 61 cm Bongo Net, MARMAP Double Oblique tow; 3 = 61 cm Bongo Net, old stepped oblique tow; and 4 = 61 Bongo Net, Surface Tow.

[33] Plot types: 1 = Scaled Symbol; 2 = Contour Abundance; 3 = Cumulative Ranked Abundance Percentile.

[34] Cumulative Rank Abundance Percentile (CRA%) is estimated by first ranking the observations (unit measure, usually total number of a species and stage per set or area) from lowest to highest; estimating the cumulative percentage abundance curve; and assigning the value of the measure that occurs at different percentage points on the

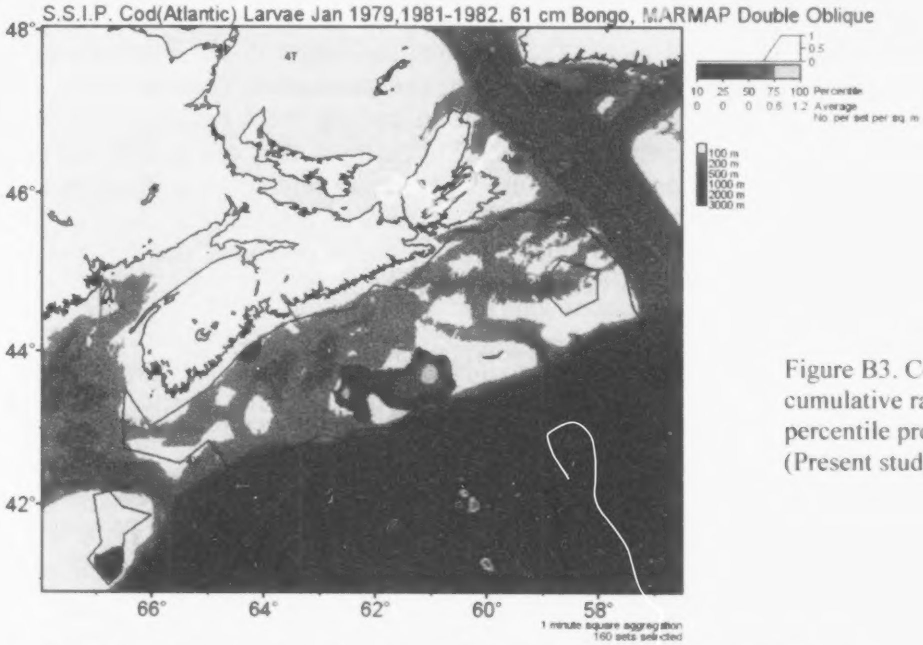
S.S.I.P. Cod(Atlantic) Larvae Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique
48°
46°
44°
42°
66°
64°
62°
60°
58°
4T
1
0.5
0
10 25 50 75 100 Percentile
0 0 0 0.6 1.2 Average
No. per set per sq. m
100 m
200 m
500 m
1000 m
2000 m
3000 m
1 minute square aggregation
160 sets selected

Figure B3. Contour plot of cumulative rank abundance percentile produced by VDC (Present study).

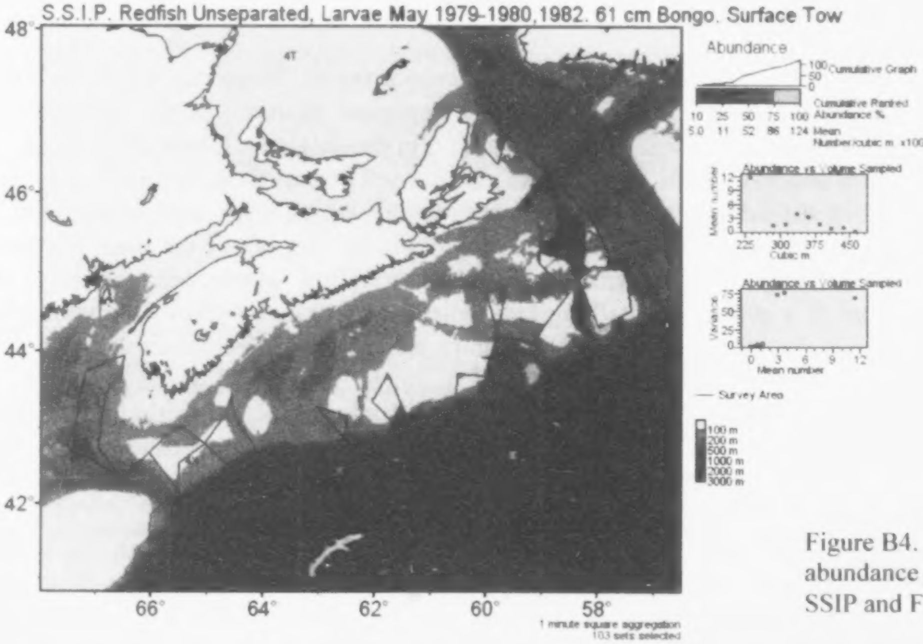
S.S.I.P. Redfish Unseparated, Larvae May 1979-1980,1982. 61 cm Bongo. Surface Tow
48°
46°
44°
42°
66°
64°
62°
60°
58°
4T
Abundance
100
50
0
Cumulative Graph
Cumulative Ranked
10 25 50 75 100 Abundance %
5.0 11 52 86 124 Mean
Number/cubic m. x1000
Abundance vs Volume Sampled
Mean number
12
9
6
3
0
225 300 375 450
Cubic m
Abundance vs Volume Sampled
Variance
75
50
25
0
0 3 6 9 12
Mean number
Survey Area
100 m
200 m
500 m
1000 m
2000 m
3000 m
1 minute square aggregation
103 sets selected

Figure B4. Contoured abundance plot produced from SSIP and FEP data by VDC.

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cumulative distribution. This approach provides a good indicator of the shape of spatial distribution, in which the central contours represent the contribution of the areas having the highest catch per unit (i.e. set or area).

interchange format) were placed in a tab-delimited text file and subsequently imported into MSAccess.

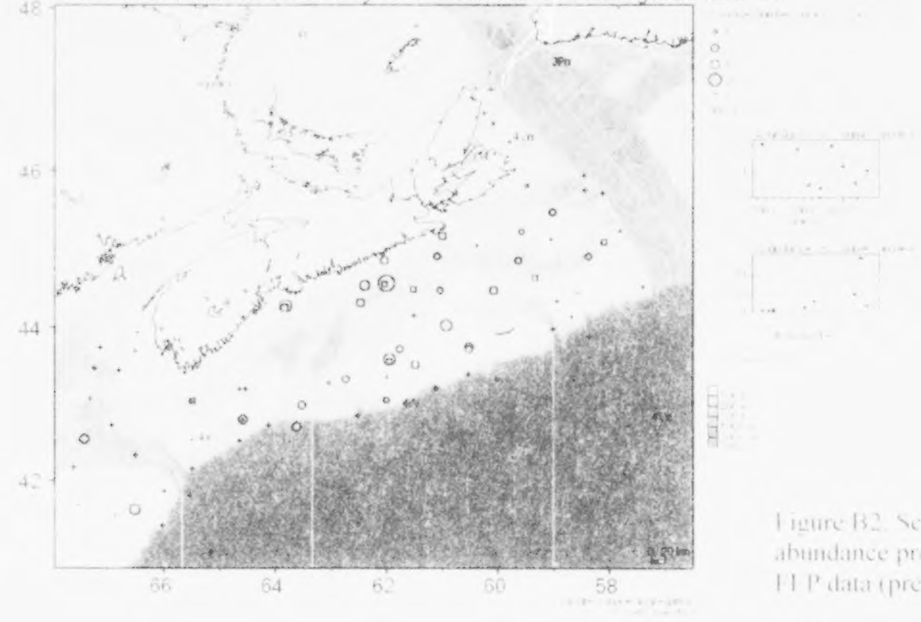
S.S.I.P. Cod (Atlantic), Larvae May 1979-1980,1982, 61 cm Bongo, Surface Tow
48
46
44
42
66
64
62
60
58

Figure B2. Scaled symbol plot of larval abundance produced from SSIP and FEP data (present study).

Each file generated through ACON from SSIP and FEP datasets was given a code as follows:

E183-4321R-1-5-1-3-2-3 represents

E183-source reference of the present study
4321R-species number, DFO research surveys
1-stage (1=eggs)
5-month (5=May)
1-survey, either SSIP (1) or FEP (2)
3-gear type[32]
2-abundance measure (always 3)
3-plot type[33]

B.3.2.2 Percentile Mapping – Cumulative Rank Abundance Percentile Plots

The DFO, Marine Fish Division ACON VDC has developed an approach to generate plots of cumulative rank abundance percentile, which display in the form of contour plots in which the contours represent percentile points on the ranked cumulative abundance curve.[34] This approach has been used in presentations of ichthyoplankton information generated from SSIP and FEP survey data (Figures B4 & 8). Maps of CRA% show contours of the percentiles (25, 50, and 75%) and the map includes a key showing the ranked cumulative abundance curve (Figure 8) and an outline which shows the area for which data were available.

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[32] 1 = 1 meter net, surface tow; 2 = 61 cm Bongo Net, MARMAP Double Oblique tow; 3 = 61 cm Bongo Net, old stepped oblique tow; and 4 = 61 Bongo Net, Surface Tow

[33] Plot types: 1 = Scaled Symbol; 2 = Contour Abundance; 3 = Cumulative Ranked Abundance Percentile

[34] Cumulative Rank Abundance Percentile (CRA%) is estimated by first ranking the observations (unit measure usually total number of a species and stage per set or area) from lowest to highest, estimating the cumulative percentage abundance curve, and assigning the value of the measure that occurs at different percentage points on the

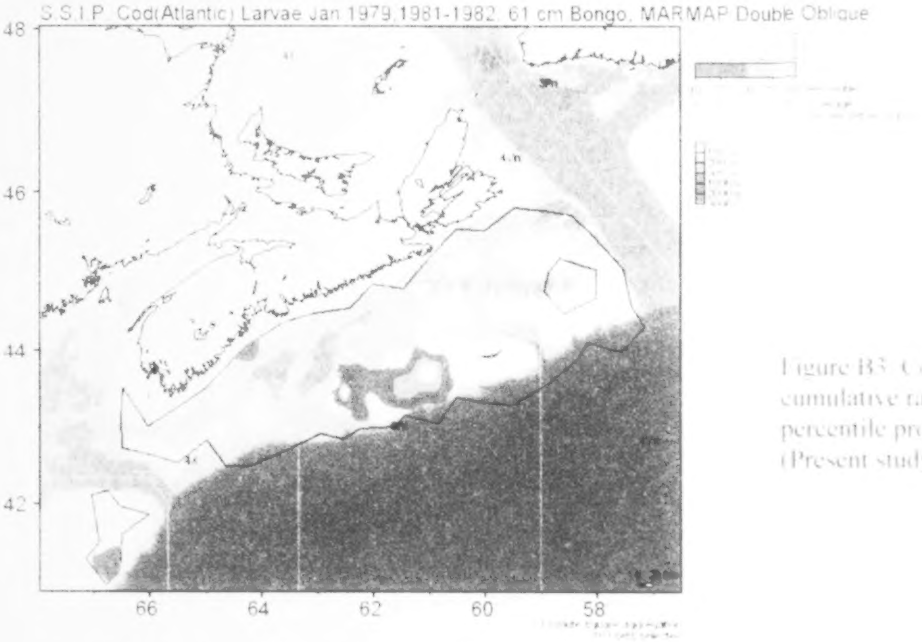
S.S.I.P. Cod(Atlantic) Larvae Jan 1979,1981-1982, 61 cm Bongo, MARMAP Double Oblique
48
46
44
42
66
64
62
60
58
4Vn

Figure B3. Contour plot of cumulative rank abundance percentile produced by VDC (Present study).

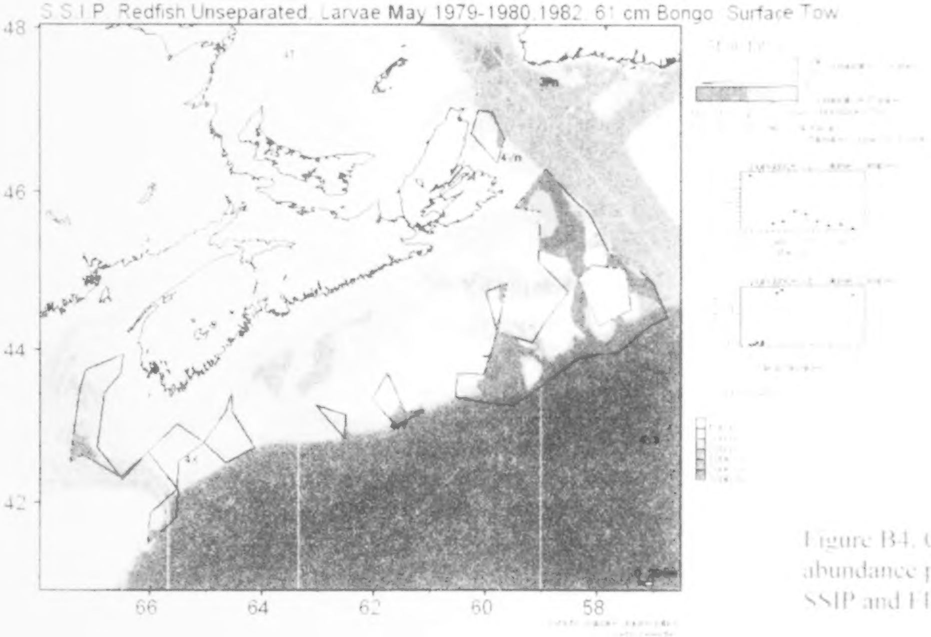
S.S.I.P. Redfish Unseparated. Larvae May 1979-1980,1982. 61 cm Bongo. Surface Tow
48
46
44
42
66
64
62
60
58
4Vn

Figure B4. Contoured abundance plot produced from SSIP and FEP data by VDC

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cumulative distribution. This approach provides a good indicator of the shape of spatial distribution, in which the central contours represent the contribution of the areas having the highest catch per unit (i.e. set or area).

B.4 Management of Polygon Data

B.4.1 General

Use of polygon information in GIS-compatible format is a distinctive feature of EAISSNA. Many of the analyses of ichthyoplankton distribution and abundance are presented as contoured distribution plots and scaled symbol plots. The presentations assist in the interpretation of seasonal and distributional patterns and result in descriptive summaries. Contour maps, when placed in GIS format, however, have additional value in making them readily accessible to various computer-based data management applications. For example, they can be searched based on location; and otherwise readily summarized. Further, literature references to distributions of fish eggs and larvae are often descriptive and defined in terms of regions (e.g. Georges Bank, Sable Island Bank) which can be defined in a geographic sense as polygons, thereby making it possible to use a GIS to access some of the descriptive information in the studies.

EAISSNA development included consideration of polygon data at several levels:

- Initial recognition of the need for geographic regions to be defined to permit preparation of regional summaries;
- Need for new contour maps to be generated from original data sources (i.e. SSIP and FEP) to provide background for determination of distributions and seasonal patterns;
- Recognition that contour maps when transferred to digital polygons made them searchable in a computer database based on location; and
- Acknowledgement that digital versions of maps in graphic (PNG) form would be relevant to examination of information in the database.

Polygons in a GIS context are areas in a geographic reference frame "bounded by a closed loop of straight-line segments"(Aronoff 1991)[35] and which represent features of the environment which have characteristics or 'attributes', which are stored in the database. Bounded areas which have an outer boundary and have areas 'cut out' are also classed as polygons. In a GIS, polygons are stored as a series of the latitude and longitude coordinates which were used to generate x- and y- coordinates related to a particular map and projection, for display of the map. Software tools are available in Geographic Information Systems, to allow automated searching for polygons, in particular if a given latitude/longitude pair occurs or not within a polygon in a particular map. The initial concept in EAISSNA was to provide the information to define the polygons relevant to fish egg and larvae distributions,stored in a way which would be a accessible to GIS tools (e.g. MapInfo) linked by loading the database tables directly into the GIS. The approach used in EAISSNA to store polygon information involves converting polygons to MapInfo map interchange format, which consists of two ASCII text files per polygon, one with the attributes of the polygon (the "MID", containing the field or column names from the MapInfo table used to display attributes and labels on the map); and the second, the "MIF" an ASCII text file listing the coordinates of the line defining the polygon and some 'header' and 'trailer' information.

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[35] In a GIS, several polygons having the same attributes occupy a single map layer.

The two MID/MIF files are stored in separate 'memo' fields[36] in the MS Access tables. Thus a single record (or row) in the database table can contain all the information needed to describe, display, and search a polygon.

Polygons generated by VDC ACON from SSIP and FEP data as well as being produced as graphic (PNG) files were produced directly in MID/MIF format (as described above) to allow management and inclusion in the MSAccess database.

B.4.2 Polygons from Contour and Cumulative Rank Abundance Percentile Maps

Component levels or layers of contour maps (including the cumulative rank abundance percentile maps) were indicated by giving each a unique number (1-n) depending on the level, with the outer or most widespread polygon given 1. This number is stored in a field in the "Distribution_polygons" table, along with a code in another field that indicates whether there are one or more than one component polygons in the contour map. Only the outer boundary of each component polygon was digitized.[37] Polygons which represent areas (i.e. spawning beds, geographic features) have only one level (polygon_level = "1").

Each of the component contours occupies a single record in the database. This approach was selected, rather than combining all the contours in a single MapInfo table, and producing a single MID/MIF file for each map, because of a peculiarity in MapInfo GIS software, which arbitrarily selects the stacking order in which the polygons imported from a MID/MIF are displayed (while we require them to be displayed in a consistent order, together forming the entire contour plot when combined, in a GIS).

Original MapInfo files generated from digitized polygon maps, are included with the database, and the identifier or caption information is presented in an appropriate table in the "Distribution_polygons" table. MapInfo files are named according to the same convention as graphics files, including codes for source reference, species, stage etc. (See section 3.4.3).

B.5 Storage of Files on the EAISSNA CD

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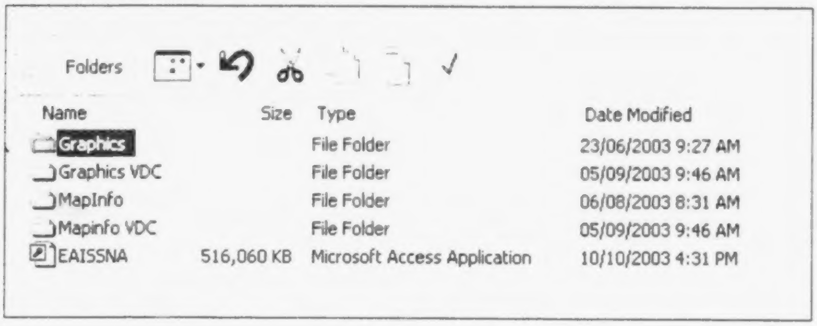
[36] A 'memo' field or column in an electronic database management system, is a type into which long text passages or other information (e.g. bitmaps) may be stored in MSAccess, and attribute information is stored (and is a 'virtual field in that the contents may be stored in another file that is invisible to the user). The equivalent field type for 'memo' in Oracle is 'long'

[37] A contour plot is divided into a series of concentric rings of areas, each of which represents a range of values. Each of the polygons could be represented in two ways, one of which is a 'donut' out of which the higher levels or polygons have been cut, and the resulting polygon is characterized or given the attribute of the range of values between the value of the outer margin and that of the minor. The second approach, which we have used here, is to only provide the outer boundary of the polygon; each polygon has a unique value or attribute (e.g. "> $1/m^2$") and all points in the polygon therefore have values greater than the value of the outer value. Of the polygons located in a search on geographic coordinates, the value of the one with the highest number in the "Polygon_level" field represents the lower limit for the attribute for the geographic reference, while the attribute for the next higher level in the polygon (polygon_level= n+1, and in which the coordinate points were not shown to occur) represents the upper limit for the point.

Associated with the database is a library of graphics and MapInfo format files or polygons stored in a MID/MIF format in the database. These files are stored in the same directory as the databases in subdirectories entitled 'Graphics' and 'MapInfo'. Filenames of associated graphics and MapInfo files are stored in fields in the data, graphics and polygon tables. The component MapInfo files have a further subdirectory with the identifier name of the map. Both "Graphics" and "Graphics VDC" have HTML indices. The directory structure is shown in Figure B5.



Name	Size	Type	Date Modified
Graphics		File Folder	23/06/2003 9:27 AM
Graphics VDC		File Folder	05/09/2003 9:46 AM
MapInfo		File Folder	06/08/2003 8:31 AM
Mapinfo VDC		File Folder	05/09/2003 9:46 AM
EAISSNA	516,060 KB	Microsoft Access Application	10/10/2003 4:31 PM

Figure B5. Directory structure of EAISSNA database.

B.6 Quality Control

Database entries were checked on several levels: 1) information was double-checked on entry during initial review; 2) the information in most records was reviewed by a second individual during the editing process and 3) five per cent of publications (10 publications) were reviewed randomly. Checks of spelling and consistency of entries was also checked through routine database sorts and conducting queries to identify differences in spellings and data entry. Some entry errors were detected and corrected on the review in (2) which covered most of the database records. Errors found and corrected at Stage 2 were not recorded, but included number conversions (scientific to engineering notation); interpretation errors (confusion of numbers representing population counts, density (numbers per unit area), production estimates (e.g. egg production per region and per unit area); and spelling errors.

B.7 Ichthyoplankton Sampling Gear

Gear type or sampling approach used to obtain the data is important in understanding the data set, and in comparing studies. Information on spawning seasonality can come from adult surveys by trawl or fixed gear, showing timing and occurrence of individuals in spawning condition and location of reproductive and spent adults. Aerial observation of herring nets in the Gulf of St. Lawrence has been used to determine location of spawning beds (e.g. Messieh and Pottle 1986). Egg and larval information comes principally from plankton nets (e.g. ring, bongo or neuston) typically standardized as to mesh size and towing approach (e.g. SSIP, FEP and MARMAP), but can come from incidental occurrences of species in tows of other kinds, such as the Hardy Plankton Recorder (Hardy 1936; Longhurst *et al.* 1966).

Gear type was reported in general terms only in the database. Major surveys (e.g. SSIP, MARMAP) tended to be consistent in the general approach and the data generated from them is clearly indicated in the dataset. A summary of gear types for SSIP, FEP and DFO's Larval Herring Program (LHP) is presented in Hanke *et al.* (2001a). Sampling approaches and gear types included: vertical ring net (0.5 or 1 m diameter); 61-cm Bongo net (oblique tows or surface); and neuston net tows at the surface, with flow meters in the mouth of nets. Various standard mesh sizes were used, typically 333 and 505 um. A conductivity temperature depth (CTD) recorder was attached to the Bongo net frame for recording depth of tow. Nets were towed at 2.5 knots (1.3 ms^{-1}); lowered and retrieved at 50 and 20 metres per minute respectively. MARMAP survey gear and methodology is summarized in Sibunka and Silverman (1989). An 0.61 m bongo sampler with 333 and 505 um mesh nets, and for special studies an 0.2 m bongo sampler (mesh size from 53 to 505 um) was towed with the larger ones (Sibunka and Silverman 1989; Posgay and Marak (1980); Smith and Richardson (1977) and Jossi and Marak (1983). MARMAP used time-depth recorders to measure depth of tows. Tows were 'smooth' double oblique, lowered to a maximum depth of 200 m or within 5 m of the bottom; nets were deployed at 50 m/min and retrieved at 20 m/min.

APPENDIX C — DATA STRUCTURE

SOURCES

Field Name	**Contents**	**Field Type**	**Field Width**
REF_NUM	Unique number for source of data.	Text	10
TITLE	Correct journal citation for source.	"	255
TITLE_CONTINUED	Continuation of title from 'TITLE' above.	"	255
CITATION	Brief journal citation for source.	"	50
SOURCETYPE	Source origin (e.g. publication, raw data).	"	40
ABSTRACT	Memo field containing abstract.	Memo	
COPYRIGHT_OWNER	Name of copyright owner.	Text	250
COPYRIGHT_INFO	Nature of use restriction.	Text	250

SOURCES_ADDITIONAL

Field Name	**Contents**	**Field Type**	**Field Width**
REF_NUMBER	Unique number for source of data.	Text	10
TITLE	Correct journal citation for source.	"	255
TITLE_CONTINUED	Continuation of title from 'TITLE' above.	"	255
CITATION	Brief journal citation for source.	"	50
CROSS_REF	Reference to publication in the <*Sources*> table in which the document is cited.	"	10

ESRF_SPECIES_LIST

Field Name	**Contents**	**Field Type**	**Field Width**
SPEC_NUM_VDC	Research code for fish species.	Text	10
SPEC_NUM_COMMERCIAL	Code number for species from DFO commercial statistics.	Text	10
SPEC_NAME_COMMON	Common name for species.	"	60
SPEC_NAME_SCIENTIFIC	Scientific name for species.	"	60
TSN	Taxonomic serial number (TSN, 6 digits) from International Taxonomic Information System (ITIS) for the species listed.	Number	
TSN_ACCEPTED	TSN for the accepted name for the species in ITIS, if the name used is not the accepted name.	Number	
TSN_USE	Recommended TSN to use, which is equivalent to "TSN_ACCEPTED".	Number	
CBIF_HREF	Web link to information on the species in the Canadian Biodiversity Information Facility.	"	255
ITIS_HREF	Web link to information on the species in the International Taxonomic Information System.	"	255
FBASE_HREF	Web link to information on the species in *FishBase* (link has to be manually tested).	"	255
FBASE_HREF_VALID	*FishBase* link is functional (Y) or not functional (N). Field should be updated after manual test of link.	"	10

Field Name	Contents	Field Type	Field Width
LBASE_HREF	Web link to information on the species in the *LarvalBase*, Global Information System about Fish Larvae (link has to be manually tested).	"	255
LBASE_HREF_VALID	*LarvalBase* link is functional (Y) or not functional (N). Field should be updated after manual test of link.	"	10

GEOGRAPHIC FEATURES

Field Name	Contents	Field Type	Field Width
FEATURENUM	Reference number for geographic feature, links with main database.	Text	6
FEATURE	Name of geographic feature. Includes many features from Eastern Canadian waters outside the study area. Allow additional areas to be included later.	"	50
FEATURE_TYPE	Type of feature; description.	"	20
GENERAL_AREA	General location of feature.	"	50
FEATURE_ID	Same as "FEATURE" but only the features referenced in the database tables are included.		50
FEATURE_POLY_MID	Text field with 'MID" information.	Memo	
FEATURE_POLY_MIF	'Memo' field with polygon for feature.	"	
FEATURE_BMP_OLE	OLE link for bitmap showing feature in relation to study area.	OLE	
FEATURE_BMP_FILEREF	File reference to bitmap showing feature in relation to study area.	Text	50
MAXLAT	Maximum latitude of feature.	"	10
MINLAT	Minimum latitude of feature.	"	10
MAXLONG	Maximum longitude of feature.	"	10
MINLONG	Minimum longitude of feature.	"	10
SOURCE	Citation for source document.	"	50
COMMENT	General information about the record.	"	100
ADL_TYPE	Alexandria Digital Library (ADL) general feature type (e.g. banks, bays).	"	25
ADL_DESIGNATION	ADL specific feature type and code (e.g. "BNKU (bank)".	"	25
ADL_LONGITUDE	Longitude in ADL of a point describing the feature, negative decimal degrees and degree-minute-second.	"	30
ADL_LATITUDE	Latitude in ADL of a point describing the feature, decimal degrees and degree,minute,second format.	"	30
ADL_ID	Unique identification number of the feature in ADL, seven digits or "Not Listed".	"	30
ADL_MAXLONG	Maximum longitude (negative decimal degrees and degree-minute-second format) of a polygon feature in ADL (e.g. a bay) where available.	"	30
ADL_MINLONG	Minimum longitude (negative decimal degrees and degree-minute-second format) of a polygon feature in ADL. .	"	30

Field Name	Contents	Field Type	Field Width
ADL_MAXLAT	Maximum latitude (decimal degrees and degree-minute-second format) of a polygon feature in ADL.	"	30
ADL_MINLAT	Maximum latitude (decimal degrees and degree-minute-second format) of a polygon feature in ADL.	"	30

DISTRIBUTION DATA

Field Name	Contents	Field Type	Field Width
REF_NUM	Reference number of data source.	Text	10
RECORD_NUM	Line in database table.	Number	
ORDER	Consecutive series of numbers for records from each data source.	Number	
SPEC_NUM_COMMERCIAL	Code number for species from DFO commercial statistics.	Text	10
SPEC_NUM_VDC	Code number for species from DFO research surveys.	"	10
SPEC_NAME_SCIENTIFIC	Species scientific name.	"	50
SPEC_NAME_COMMON	Common name.	"	70
STAGE	Development stage (e.g. egg, larvae).	"	20
STAGE_CODE	Code for development stage: 1. Egg 2. Larvae 3. Juvenile 4. Adult.	"	10
ACTIV_CODE	Activity Code: 1. Early development 2. Feeding; 3. Spawning; 4. Brooding eggs. 5. Late development. 6. Overwintering.	"	10
ACTIVITY	Activity (e.g. Early development, spawning, late development etc.)	"	50
LOCAT_GEN	General location (e.g. Georges Bank, Scotian Shelf, Newfoundland Shelf).	"	150
LOCAT_SPEC	Specific location (e.g. Northeast Peak).	"	250
LOCAT_FEATURE	Name of feature (Georges Bank, Emerald Basin) if 'DISTRIB_TYPE' = 3.	"	250
INFO_LEVEL_ABUND	Occurs when there is abundance or population information. Summary—Overall values summarized for the study; Specific—individual or particular values from the study.	"	20
INFO_ABUND_CODE	1. Summary. 2. Specific. 3. Secondary.	"	5
TIMING_INFO_LEVEL	Occurs when there is timing or seasonality information. Summary—Overall values summarized for the study; Historic—comes from generally accepted knowledge; Specific—individual or particular values from the study.	"	20
DATA_ORIGIN_LEVEL	Primary (generated by the source study); Secondary (from a source document), Historical (generally known). Anecdotal (non-scientific reports, interviews)	"	20
AREA_TYPE	1 = point data (e.g. specific area within geog feature, such as a "bed"); 2 = subarea within a feature; 3 = geographic feature (e.g. Georges Bank); 4 = other.	"	5

Field Name	**Contents**	**Field Type**	**Field Width**
CRUISE	Cruise number.	“	10
STATION	Station number.	“	10
GEOREF	1. Listed in original source. 2. Coordinates are for an area. 3. Determined from a map in the original source. 4. Position is not available.	“	5
LAT_DEG	Latitude of point or area data in degrees.	“	10
LAT_MIN	Decimal minutes.	“	10
LONG_DEG	Longitude of point or area data in degrees as positive number.	“	10
LONG_MIN	Decimal minutes for longitude as positive number.	“	10
DEPTH	Depth in metres where specified.	“	10
DEPTH_CODE	1 = fixed value; 2 = range.	“	5
DATE	Date or dates in “D/M/Y” if a point in time (i.e. ‘PERIOD_TYPE’ = 3) is sampled. Otherwise year or range of years.	“	100
YEAR_BEGIN	Together with “YEAR_END” describes time period covered by data record.	“	25
YEAR_END	Together with “YEAR_BEGIN” describes time period covered by data record.	“	25
PERIOD_TYPE	Type of record: 1. Seasonal; 2. Monthly; 3. Point; 4. Defined Range. 5. Annual. Refers to type of information—it could be used to specify a monthly series of maps.	“	10
TIMING_REPORT	Information to indicate which records constitute a summary to be used in display of timing data. 1. Present. Includes suitable presentation of period of spawning, larval occurrence etc, possibly including time of peak abundance. 2. Absent. If records are other than a suitable summary.	“	10
SEASONTYPE	1. Season, if only the seasons (but not months) have been specified. 2. One of four seasons: Spring (Mar-May), Summer (Jun-Aug), Fall (Sep-Nov), Winter (Dec-Feb), if the months have been specified. Also includes season specified in source document.	“	50
SEASON	Seasons stated or “all year”.	“	50
SEASON_CODE	1 – 4 representing the seasons; 5 = all year.	“	10
MONTH	1-12 (this field could hold multiple numbers, e.g. 3, 6-9). 1-12 = all year.	“	12
MONTH_BEGIN	Month that activity or distribution begins. Periods that begin in one year and end the following year (e.g. December-January) are broken up into a first period occurring in this field (e.g. January) and a second in “MONTH_BEGIN2” and “MONTH_END2” below.	“	50
MONTH_END	Month that activity or distribution ends.	“	50
PEAK	Peak month or range of months.	“	50
MONTH_BEGIN2	Month in which a second period of activity or distribution begins.	“	50

Field Name	Contents	Field Type	Field Width
MONTH_END2	Month in which a second period of activity or distribution ends.	"	50
PEAK2	Peak month or range of months in the second period of occurrence or abundance.	"	50
POLYGONS_GRAPHICS_AVAIL	This field is filled if there are maps or graphics associated with the record. 1 = polygons; 2 = bitmaps of maps or graphics.	"	5
DISTRIB_BMP_OLE	Maps or graphics that are associated with the record can be linked to the corresponding Portable Network Graphics files via an OLE link. Links are not activated presently, but can be made to the file on the CD, named in the field below.	OLE	
DISTRIB_BMP_FILEREF	File reference for bitmap map or graphic of relevant data or conditions. Contains unique number associated with distribution map. All the relevant bitmaps are saved as Portable Network Graphics files having the "*.png" extension.	Text	50
DISTRIB_BMP_CAPTION	Brief description of the bitmap. Could be the figure caption from the source document.	"	250
MAXLAT	Maximum latitude for area covered by the study or focus of distribution.	"	10
MINLAT	Minimum latitude for area covered by the study or focus of distribution.	"	10
MAXLONG	Maximum longtitude for area covered by the study or focus of distribution.	"	10
MINLONG	Minimum longitude for area covered by the study or focus of distribution.	"	10
POPULATION	Abundance estimate for large area features.	"	20
POPULATION_FOR	Refers to the geographic area for which population has been estimated.	"	200
POPULATION_UNITS	Refers to "POPULATION". Always = "individuals".	"	20
ABUNDANCE	Measurements of abundance.	"	20
UNITS	Units of measurement stated (e.g. number/m^2).	"	20
UNITS_CODE	1. number/m^2; 2. number/m^3; 3. number/km.	"	5
ABUND_DESCR	Qualitative assessment or comment on abundance (e.g. average, peak).	"	40
ABUNDANCE_FOR	Refers to the geographic area for which abundance has been estimated.	"	200
ABUNDANCE_REPLICATES	Number of replicates for estimate of abundance.	"	10
REPLICATES_TYPE	Type of replicates (e.g. "sets", "tows")	"	10
GEAR	Types of gear used in fish eggs/larvae survey.	"	100
CITATION	Citation for source. (e.g. Hurley and Campana 1989; O'Boyle pers. Comm..).	"	50
DATA_SOURCE	Citation or reference to source of data where stated, other than original reference (e.g. citation, SSIP, FEP).	"	255

Field Name	**Contents**	**Field Type**	**Field Width**
COMMENT	Any comments about data.	"	250
REVIEW_LEVEL	1. Principal references (complete review). 2. Secondary references (areas adjacent to study area, partial review).	"	5

DISTRIBUTION BITMAPS

Field Name	**Contents**	**Field Type**	**Field Width**
REF_NUM	Reference number of data source.	Text	10
RECORD_NUM	Line in database table.	Number	
ORDER	Consecutive series of numbers for records from each data source.	Number	
SPEC_NUM_COMMERCIAL	Code number for species from DFO commercial statistics.	Text	10
SPEC_NUM_VDC	Code number for species from DFO research surveys.	"	10
SPEC_NAME_SCIENTIFIC	Species scientific name.	"	50
SPEC_NAME_COMMON	Common name.	"	70
STAGE	Development stage (e.g. egg, larvae).	"	20
STAGE_CODE	Code for development stage: 1. Egg 2. Larvae 3. Juvenile 4. Adult.	"	10
ACTIV_CODE	Activity Code: 1. Early development 2. Feeding; 3. Spawning 4. Brooding eggs. 5. Late development. 6. Overwintering.	"	10
ACTIVITY	Activity (e.g. Early development, spawning, late development etc.)	"	50
LOCAT_GEN	General location (e.g. Georges Bank, Scotian Shelf, Newfoundland Shelf).	"	100
LOCAT_SPEC	Specific location (e.g. Georges Bank, Northeast Peak).	"	250
LOCAT_FEATURE	Name of feature (Georges Bank, Emerald Basin) if 'DISTRIB_TYPE' = 3.	"	255
DATE	Date or dates in "D/M/Y" if a point in time (i.e. 'PERIOD_TYPE' = 3) is sampled. Otherwise year or range of years.	"	150
YEAR_BEGIN	Together with "YEAR_END" describes time period covered by data record.	"	25
YEAR_END	Together with "YEAR_BEGIN" describes time period covered by data record.	"	25
PERIOD_TYPE	Type of record: 1. Seasonal; 2. Monthly; 3. Point; 4. Defined Range. Refers to type of information—it could be used to specify a monthly series of BMP maps.	"	10
SEASON	Season stated or "All Year"	"	50
SEASON_CODE	1 – 4 representing the seasons; 5 = all year.	"	10
MONTH	1-12 (this field could hold multiple numbers, e.g. 6-9). 1-12 = all year.	"	50
MONTH_BEGIN	Month that activity or distribution begins.		50
MONTH_END	Month that activity or distribution ends.		50
MAP_TYPE	1. Contour abundance. 2. Area map. 3. Contour percentile. 4. Scaled symbols. 5. Station map. 6. Other.	"	50

Field Name	Contents	Field Type	Field Width
MAP_TYPE_CODE	1. Contour abundance. 2. Area map. 3. Contour percentile. 4. Scaled symbols. 5. Station map. 6. Other.	“	50
POLYGON_ID	Unique identifier number for the map, which is also included in the filename for the associated Portable Network Graphic.	“	50
DISTRIB_BMP_OLE	Contains an OLE link to the map (PNG file) or graphic associated with the record.	OLE	
DISTRIB_BMP_FILEREF	File reference for map or graphic associated with the record.	Text	40
DISTRIB_BMP_CAPTION	Caption for map or graphic.	“	250
MAXLAT	Maximum latitude for area covered by the study, polygon, or area of the polygon describing the distribution.	“	10
MINLAT	Minimum latitude for area covered by the study, polygon, or area of the polygon describing the distribution.	“	10
MAXLONG	Maximum longtitude for area covered by the study, polygon, or area of the polygon describing the distribution.	“	10
MINLONG	Minimum longitude for area covered by the study, polygon, or area of the polygon describing the distribution.	“	10
CITATION	Citation for source. (e.g. Hurley and Campana 1989; O'Boyle pers. Comm.).	“	50
DATA_SOURCE	Citation or reference to source of data, where stated, other than original reference (e.g. citation, SSIP, FEP).	“	255
COMMENT	Any comments about the information.	“	250

DISTRIBUTION POLYGONS

Field Name	Contents	Field Type	Field Width
REF_NUM	Reference number of data source.	Text	10
RECORD_NUM	Line in database table.	Number	
ORDER	Consecutive series of numbers for records from each data source.	Number	
CITATION	Citation for source. (e.g. Hurley and Campana 1989; O'Boyle pers. Comm..).	Text	50
SPEC_NUM_COMMERCIAL	Code number for species from DFO commercial statistics.	“	10
SPEC_NUM_VDC	Code number for species from DFO research surveys.	“	10
SPEC_NAME_COMMON	Common name.	“	50
STAGE	Developmental stage (e.g. Egg, larvae.)	“	20
ACTIVITY	Activity (e.g. Early development, spawning, late development etc.)	“	50
LOCAT_FEATURE	Name of feature (e.g. Georges Bank).		150
DATA_ORIGIN_LEVEL	Primary (generated by the source study); Secondary (from a source document), Historical (generally known). Anecdotal (non-scientific reports, interviews).	“	20

Field Name	Contents	Field Type	Field Width
MAP_TYPE	1. Contour abundance. 2. Area map. 3. Contour percentile. 4. Scaled symbols. 5. Station map. 6. Other.	“	100
MAP_TYPE_CODE	1. Contour abundance. 2. Area map. 3. Contour percentile. 4. Scaled symbols. 5. Station map. 6. Other.	“	5
POLYGON_ID	Unique code for polygon. Refers to all layers in a contour plot (i.e. if “DISTRIB_TYPE_CODE” is 1 or 3).	“	50
POLYGON_LEVEL	Number from 1 to “n” for each of the contour layers in a contour plot, or for the single layer if only one polygon describes the distribution.	“	5
POLYGON_TYPE	1. The polygon represents the area sampled. 2. The polygon represents component contours or contour plots of a distribution of abundance.	“	5
DISTRIB_POLY_MID	MID file to accompany the map interchange format (MIF) file.	Memo	
DISTRIB_POLY_MIF	One of several polygons in MID/MIF GIS interchange format in a ‘Memo’ field in successive records that together generate distribution and contour maps. Created from maps of egg & larvae distributions.	Memo	
MAXLAT	Maximum latitude in decimal degrees, of the smallest rectangle enclosing the polygon. Used for searching for polygons which are in proximity to specified points or areas.	Text	10
MINLAT	Minimum latitude in decimal degrees, of the smallest rectangle enclosing the polygon. Used for searching for polygons in proximity to specified points or areas.	“	10
MAXLONG	Maximum longitude in negative decimal degrees, of the smallest rectangle enclosing the polygon. Used for searching for polygons in proximity to specified points or areas.	“	10
MINLONG	Minimum longitude in negative decimal degrees, of the smallest rectangle enclosing the polygon. Used for searching for polygons in proximity to specified points or areas.	“	10
DISTRIB_ABUND_LOWER	The abundance range for each of the contour levels.	“	25
DISTRIB_ABUND_UNITS	The units of abundance for each of the contour levels.	“	30
DISTRIB_ OVERALL_FILEREF	File reference for map in PNG format which shows whole map or entire contour plot. Includes entire contour plots generated by VDC.	“	25
DISTRIB_OVERALL_OLE	OLE link for map in PNG format which shows whole map or entire contour plot.	OLE	
DISTRIB_OVERALL_CAPTION	Caption for the map.	Text	250
COMMENT	Any comments.	“	250

DISTRIBUTION_POLYGONS_VDC

Field Name	**Contents**	**Field Type**	**Field Width**
REF_NUM	Reference number of data source (always F183).	Text	10
RECORD_NUM	Line in database table.	Number	
ORDER	Consecutive number for each data source (in this case same as "RECORD_NUM".	Number	
CITATION	Citation for source. (e.g. Hurley and Campana 1989; O'Boyle pers. Comm..).	"	50
DISTRIB_OVERALL_CAPTION	Caption for the map.	"	255
SPEC_NUM_COMMERCIAL	Code number for species from DFO commercial statistics.	"	10
SPEC_NUM_VDC	Code number for species from DFO research surveys.	"	10
SPEC_NAME_COMMON	Common name.	"	70
STAGE	Developmental stage.	"	20
LOCAT_FEATURE	Name of geographic feature (either "Scotian Shelf" or "Southwest Nova Scotia Shelf, Western Scotian Shelf").	"	50
DATA_ORIGIN_LEVEL	All "Primary".	"	50
MAP_TYPE	1. Contour abundance. 2. Area map. 3. Contour percentile. 4. Scaled symbols. 5. Station map. 6. Other.	"	25
MAP_TYPE_CODE	1-6 (see above).	"	5
MONTH	Number from 1-12, designating the month used to summarize the data.	"	50
POLYGON_ID	Unique code for map. Refers to all layers in a contour plot.	"	50
DATA_SOURCE	Citation or reference to source of data where stated, other than original reference (e.g. citation, SSIP, FEP).	"	255
POLYGON_LEVEL	Number from 1 to "n" for each of the contour layers in a contour plot, or for the single layer if only one polygon is used.	"	5
POLYGON_TYPE	1. The polygon represents the area sampled. 2. The polygon represents component contours or contour plots of a distribution of abundance.	"	5
DISTRIB_POLY_MID	MID file to accompany the map interchange format (MIF) file.	Memo	
DISTRIB_POLY_MIF	One of several polygons in MID/MIF GIS interchange format in a 'Memo' field in successive records that together generate distribution and contour maps. Created from maps of egg & larvae distributions.	Memo	
MAXLAT	Maximum latitude in decimal degrees of the smallest rectangle enclosing the polygon. Used for searching for polygons in proximity to specified points or areas.	Text	10
MINLAT	Minimum latitude in decimal degrees of the smallest rectangle enclosing the polygon.	"	10

Field Name	Contents	Field Type	Field Width
	Used for searching for polygons in proximity to specified points or areas.		
MAXLONG	Maximum longitude in negative decimal degrees, of the smallest rectangle enclosing the polygon. Used for searching for polygons in proximity to specified points or areas.	Text	10
MINLONG	Minimum longitude in negative decimal degrees, of the smallest rectangle enclosing the polygon. Used for searching for polygons in proximity to specified points or areas.	“	10
ABUNDANCE	Measurement of abundance.	“	50
DISTRIB_ABUND_LOWER	The lower abundance contour of the contour level.	“	50
DISTRIB_ABUND_UNITS	The units of abundance the contour levels.	“	20
ABUND_DESCR	Qualitative assessment or comment on abundance (always “Average”).	“	50
ABUND_REPLICATES	Number of replicates used to generate the polygons and supporting abundance information. This number is the same for all levels in a given contour plot.	“	50
REPLICATES_TYPE	Sampling units (e.g. “sets”, “tows”)	“	255
GEAR	Types of gear used in fish eggs/larvae survey.	“	100
DISTRIB_OVERALL_OLE	OLE link for Portable Network Graphic which shows whole map (i.e. it is the same for all contour levels). This link can be set up manually once the database is installed on a host computer.	OLE	
DISTRIB_ OVERALL_FILEREF	File reference for map in PNG format which shows whole map or entire contour plot.	“	255
COMMENT	Any comments.	“	255

APPENDIX D — OCCURRENCE, DISTRIBUTION AND SEASONALITY OF SPAWNING BY COMMERCIAL AND NON-COMMERCIAL FISH AND INVERTEBRATE SPECIES ON THE SCOTIAN SHELF, 1914-2002.

Appendix D - Occurrence, distribution and seasonality of spawning by commercial and non-commercial fish and invertebrate species on the Scotian Shelf, 1914-2002.

Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
American Angler, Monkfish, Goosefish	Gulf of St. Lawrence, Bay of Fundy, Scotian Shelf, US Northeast Atlantic Shelf, Gulf of Maine	Summer, Fall	<1986	June	September					Secondary	Halliday et al. 1986	F 3
American Angler, Monkfish, Goosefish	Georges Bank, Scotian Shelf	Summer	<1996							Secondary	Beanlands and Annand 1996	F 41
American Angler, Monkfish, Goosefish	Georges Bank, Scotian Shelf	Summer	<2002							Summary	DFO 2002	F186
American Angler, Monkfish, Goosefish	Western Scotian Shelf	Summer, Fall	1977-1980	June	September	July				Primary	Sherman et al. 1987	F151
American Lobster	Western Scotian Shelf	Summer	1977-1980	July	August					Primary	Sherman et al. 1987	F151
American Plaice	Bay of Fundy	Spring, Summer	<1953	April	June (early)	April-May				Secondary	Nevinsky and Serebryakov 1973	F 79
American Plaice	Scotian Shelf	Spring, Summer	<1971	March	June	April-June				Secondary	Nevinsky and Serebryakov 1973	F 79
American Plaice	Emerald Bank, Banquereau Banks	Spring, Summer	<1982	March	June	April-May				Secondary	Mobil Oil Canada Ltd. 1983.	F 29
American Plaice	Eastern Scotian Shelf	Spring, Summer	<1983							Secondary	Breeze et al. 2002	F 39
American Plaice	Gulf of Maine, Scotian Shelf	Spring	<1999							Secondary	Breeze et al. 2002	F 39
American Plaice	Scotian Shelf (northern), Banquereau Bank (northern), Emerald Bank, Browns Bank	Spring	1959-1970	May	May					Primary	Nevinsky and Serebryakov 1973	F 79
American Plaice	Western Scotian Shelf	Spring, Summer	1977-1980	March	June	April-May				Primary	Sherman et al. 1987	F151
American Sand Lance	Emerald Bank, Western Bank, Sable Island Bank, Banquereau Bank	Spring, Fall, Winter	<1982	January	March	January-February	November	December		Secondary	Mobil Oil Canada Ltd. 1983.	F 29
Atlantic Argentine	Emerald Basin	Spring, Winter	<1982	February	May (mid)	March-April				Secondary	Mobil Oil Canada Ltd. 1983.	F 29
Atlantic Cod	Browns Bank	Spring	<1979	March	April	April				Primary	Colton et al. 1979	F 51
Atlantic Cod	Emerald Bank, Western Bank	Spring, Winter	<1982	January	May (mid)	March-April				Secondary	Mobil Oil Canada Ltd. 1983.	F 29

Info Level: 'Primary' = original publication, 'Secondary' = another publication, 'Historical' = historical scientific knowledge and 'Anecdotal' = traditional knowledge

Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Atlantic Cod	Sable Island Bank, Banquereau Bank	Spring, Fall, Winter	<1982	January	May	January	November	December	December	Secondary	Mobil Oil Canada Ltd. 1983.	F 29
Atlantic Cod	Sable Island Bank, Middle Bank, Banquereau Bank	Fall	<1983	October	October					Secondary	Breeze et al. 2002	F 39
Atlantic Cod	Browns Bank, Western Bank, Emerald Bank, Bay of Fundy	Spring	<1983	March	March	March				Primary	Scott 1983	F188
Atlantic Cod	Browns Bank, Western Bank, Emerald Bank	Spring	<1983	March	March					Secondary	Breeze et al. 2002	F 39
Atlantic Cod	Sable Island Bank, Middle Bank, Banquereau Bank, Sydney Bight	Summer	<1983	July	July					Secondary	Breeze et al. 2002	F 39
Atlantic Cod	Western Bank, Sable Island Bank	Fall, Winter	<1983	November	December					Secondary	Breeze et al. 2002	F 39
Atlantic Cod	Sydney Bight	Summer	<1983	July	July					Primary	Scott 1983	F188
Atlantic Cod	Scotian Shelf (western), Southwest Nova Scotia Shelf, Browns Bank	Spring, Summer, Winter	<1987	January	June	April				Secondary	Hurley and Campana 1989	F 57
Atlantic Cod	Browns Bank	Spring, Winter	<1989	February	April					Secondary	Graham et al. 2002	F 84
Atlantic Cod	Gulf of St. Lawrence, Scotian Shelf	Spring, Summer, Fall	<1993	May	September	May (late)-June (mid)				Primary	Brander 1993	F 94
Atlantic Cod	Eastern Scotian Shelf	Spring, Summer, Winter	<1993	February	June	April-May	October	December		Primary	Brander 1993	F 94
Atlantic Cod	Western Scotian Shelf	Spring, Winter	<1993	February	May	April				Primary	Brander 1993	F 94
Atlantic Cod	Bay of Fundy, Scotian Shelf	Fall	<1998	October	November					Secondary	Davis et al. 1998	F 32
Atlantic Cod	Georges Bank, Scotian Shelf	Spring, Winter	<2000	January	May					Secondary	Breeze et al. 2002	F 39
Atlantic Cod	Western Bank, Sable Island Bank, Banquereau Bank, Middle Bank, Canso Bank	Spring, Fall	<2002							Summary	DFO 2002	F186
Atlantic Cod	Browns Bank	Winter	<2002							Summary	DFO 2002	F186
Atlantic Cod	Western Scotian Shelf	Spring, Fall, Winter	1977-1980	January	March	March-April	November	December		Primary	Sherman et al. 1987	F151
Atlantic Cod	Banquereau Bank, Sable Island Bank, Western Bank, Emerald Bank, Middle Bank, Misaine Bank, St. Anns Bank, Browns Bank, Baccaro Bank	Spring	1979-1981	March	May	May				Primary	Brander and Hurley 1992	F 35
Atlantic Cod	Banquereau Bank (western), Sable Island Bank, Middle Bank, Nova Scotia Inshore (western)	Fall, Winter	1979-1981	November	December					Primary	Brander and Hurley 1992	F 35

Info Level: 'Primary' = original publication, 'Secondary' = another publication, 'Historical' = historical scientific knowledge and 'Anecdotal' = traditional knowledge

Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Atlantic Cod	Sydney Bight, St. Anns Bank	Spring, Winter, Summer, Fall	1979-1981	January	October	May				Primary	Brander and Hurley 1992	F 35
Atlantic Halibut	Scotian Shelf	Spring (early), Fall (late), Winter	<1999							Secondary	Breeze et al. 2002	F 39
Atlantic Herring	Southwest Nova Scotia Shelf	Summer, Fall	<1968	August (late)	September (early)					Secondary	Sinclair and Tremblay 1984	F 16
Atlantic Herring	Scotian Shelf	Spring, Summer, Fall, Winter	<1970	May	December	September-October				Historical	Boyar et al. 1973	F 93
Atlantic Herring	Chedabucto Bay	Spring	<1971	May	May					Secondary	Sinclair and Tremblay 1984	F 16
Atlantic Herring	Scotian Shelf	Fall	<1979	October	November	November				Primary	Colton et al. 1979	F 51
Atlantic Herring	Gulf of St. Lawrence, Scotian Shelf, Newfoundland Shelf, Bay of Fundy, US Northeast Atlantic Shelf	Spring, Summer, Fall	<1980	April	November					Secondary	Department of Fisheries and Oceans 1980	F184
Atlantic Herring	Scotian Shelf	Fall	<1982	August	September					Secondary	Mobil Oil Canada Ltd. 1983.	F 29
Atlantic Herring	Chedabucto Bay	Spring, Summer, Fall	<1982	March	July	April-May	August	October	August-September	Secondary	Mobil Oil Canada Ltd. 1983.	F 29
Atlantic Herring	Bay of Fundy	Summer	<1984	July (late)	August (early)					Secondary	Sinclair and Tremblay 1984	F 16
Atlantic Herring	St. Marys Bay	Fall	<1985	September	October					Secondary	Haegele and Schweigert 1985	F 24
Atlantic Herring	St. Anns Basin	Spring	<1985	May	June					Secondary	Haegele and Schweigert 1985	F 24
Atlantic Herring	Chedabucto Bay	Summer, Fall	<1985	August	September					Secondary	Haegele and Schweigert 1985	F 24
Atlantic Herring	Scotian Shelf	Summer, Fall	<1987	August (late)	September (early)					Secondary	Stephenson and Kornfield 1990	F 4
Atlantic Herring	Sable Island Bank	Fall	<1999	October (late)	October (late)					Secondary	Breeze et al. 2002	F 39
Atlantic Herring	Georges Bank, Scotian Shelf	Summer, Fall	1956, 1957	August	October					Primary	Tibbo et al. 1958	F173
Atlantic Herring	Georges Bank, Scotian Shelf	Fall, Winter	1957	November	December					Primary	Tibbo et al. 1958	F173
Atlantic Herring	Western Scotian Shelf	Summer, Fall	1977-1980	August	November	September-October				Primary	Sherman et al. 1987	F151

Info Level: 'Primary' = original publication, 'Secondary' = another publication, 'Historical' = historical scientific knowledge and 'Anecdotal' = traditional knowledge

Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Atlantic Herring	Bay of Fundy	Spring	1983-1984	May	June					Historical	Bradford and Iles 1992	F105
Atlantic Herring	Minas Basin	Spring, Summer	1984	May	June					Secondary	Bradford and Iles 1992	F 5
Atlantic Herring	Sable Island Bank	Fall	1986-1999	October (mid)	October (late)					Primary	Harris and Stephenson 1999	F 28
Atlantic Mackerel	Scotian Shelf	Spring, Summer	<1943	May (end)	June (mid)					Secondary	Breeze et al. 2002	F 39
Atlantic Mackerel	Sable Island Bank	Summer	<2002	June	July					Secondary	Breeze et al. 2002	F 39
Atlantic Mackerel	Gulf of Maine, Western Scotian Shelf, Georges Bank	Spring, Summer	1977	May	June					Primary	Berrien et al. 1981	F 87
Atlantic Mackerel	Sable Island Bank	Spring, Summer	1991-1992							Primary	Fortier and Villeneuve 1996	F195
Cusk	Scotian Shelf	Spring, Summer	<1972	May	August					Secondary	Davis et al. 1998	F 32
Cusk	Scotian Shelf	Spring, Summer	<1982	April (late)	August	May-June				Secondary	Mobil Oil Canada Ltd. 1983.	F 29
Cusk	Scotian Shelf	Spring, Summer	<2002	May	August	June				Summary	DFO 2002	F186
Cusk	Western Scotian Shelf, Roseway Bank, Browns Bank, LaHave Bank, Baccaro Bank, Southwest Nova Scotia Shelf	Spring, Summer	1964	May	August	June (late)				Primary	Oldham 1972	F190
Cusk	Western Scotian Shelf	Spring, Summer	1977-1980	May	August	June				Primary	Sherman et al. 1987	F151
Golden Redfish	Scotian Shelf, Gulf of Maine	Spring, Summer	<1979	May	August	June-July				Primary	Colton et al. 1979	F 51
Haddock	Browns Bank	Spring	<1979	March	May	April-May				Primary	Colton et al. 1979	F 51
Haddock	Emerald Bank, Western Bank	Spring, Winter	<1982	February	May	April-May				Secondary	Mobil Oil Canada Ltd. 1983.	F 29
Haddock	Emerald Bank	Spring	<1983	April	April					Secondary	Breeze et al. 2002	F 39
Haddock	Browns Bank	Spring	<1983	March	March					Primary	Scott 1983	F188
Haddock	Browns Bank, Emerald Bank	Spring	<1983	March	March					Secondary	Breeze et al. 2002	F 39
Haddock	Sydney Bight, Banquereau Bank		<1983							Secondary	Breeze et al. 2002	F 39
Haddock	Browns Bank, Emerald Bank	All year	<1983	January	December					Secondary	Breeze et al. 2002	F 39
Haddock	Emerald Bank	Spring	<1983	March	April					Primary	Scott 1983	F188

Info Level: 'Primary' = original publication, 'Secondary' = another publication, 'Historical' = historical scientific knowledge and 'Anecdotal' = traditional knowledge

Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Haddock	Scotian Shelf (western), Southwest Nova Scotia Shelf, Browns Bank	Spring, Summer, Winter	<1987	January	June	May				Secondary	Hurley and Campana 1989	F 57
Haddock	Browns Bank	Spring	<1989	April	May					Secondary	Shackell et al. 1999	F171
Haddock	Browns Bank	Spring	<1989			April-May				Secondary	Page et al. 1989	F 81
Haddock	Browns Bank	Spring	<1989			April (late)-May (early)				Primary	Page and Frank 1989	F 82
Haddock	Sable Island Bank, Emerald Bank	Spring	<1989			April (late)-May (early)				Primary	Page and Frank 1989	F 82
Haddock	Browns Bank	Spring	<1989			April (mid) - May (mid)				Secondary	Brickman and Frank 2000	F185
Haddock	Browns Bank, Scotian Shelf (southwestern)	Spring, Summer	<1997	April	June					Secondary	Davis et al. 1998	F 32
Haddock	Browns Bank, Western Scotian Shelf	Spring, Summer, Winter	<1999	February	June					Secondary	Breeze et al. 2002	F 39
Haddock	Emerald Bank, Western Bank	Spring	<2001	March	April					Secondary	Breeze et al. 2002	F 39
Haddock	Browns Bank, Baccaro Bank, LaHave Bank, Roseway Bank	Spring, Summer	1970-1986	April	August	April (mid)-June (mid)				Primary	Waiwood and Buzeta 1989	F127
Haddock	Western Scotian Shelf	Spring	1977-1980	March	May	March-April				Primary	Sherman et al. 1987	F151
Haddock	Emerald Bank, Western Bank	Spring (late)	1979	April	May					Primary	O'Boyle et al. 1984	F 7
Little Skate	Western Scotian Shelf	All year	1977-1980	January	December	January			October-December	Primary	Sherman et al. 1987	F151
Longhorn Sculpin	Emerald Bank, Western Bank, Sable Island Bank, Banquereau Bank	Fall, Winter	<1982	January	February	January	November	December	December	Secondary	Mobil Oil Canada Ltd. 1983.	F 29
Longhorn Sculpin	Western Scotian Shelf	Fall, Winter	1977-1980	January	February	January	November	December	December	Primary	Sherman et al. 1987	F151
Northern Shrimp	Scotian Shelf (eastern)	Summer, Fall	<1996	June (late)	September					Secondary	Davis et al. 1998	F 32
Ocean Pout	Western Scotian Shelf	Fall	1977-1980	September	October	September				Primary	Sherman et al. 1987	F151
Pollock	Emerald Bank, Western Bank	Spring, Fall, Winter	<1982	January	March	January-February	November	December	December	Secondary	Mobil Oil Canada Ltd. 1983.	F 29

Info Level: 'Primary' = original publication, 'Secondary' = another publication, 'Historical' = historical scientific knowledge and 'Anecdotal' = traditional knowledge

Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Pollock	Emerald Bank, Western Bank	Fall, Winter	<1984	January	February		November	December		Secondary	Breeze et al. 2002	F 39
Pollock	Western Scotian Shelf	Spring, Fall, Winter	1977-1980	January	March		November	December	November-December	Primary	Sherman et al. 1987	F151
Red Hake	Scotian Shelf	Summer	<1983	July	July					Secondary	Breeze et al. 2002	F 39
Red Hake	Western Scotian Shelf	Summer, Fall	1977-1980	June	August	July				Primary	Sherman et al. 1987	F151
Red Hake	Scotian Shelf	Summer, Fall	1979	July (mid)	September					Primary	Markle et al. 1982	F 71
Red Hake	Passamaquoddy Bay, Bay of Fundy	Fall	1979	September	September					Primary	Markle et al. 1982	F 71
Redfish	Scotian Shelf	Spring	<1982	March	May	April-May				Secondary	Mobil Oil Canada Ltd. 1983.	F 29
Redfish	Scotian Shelf	Spring, Summer	<1982	May	August (mid)	June-July				Secondary	Mobil Oil Canada Ltd. 1983.	F 29
Redfish	Scotian Shelf	Spring, Summer	1960-1967	April	July	July				Primary	Bainbridge and Cooper 1971	F191
Redfish	Western Scotian Shelf	Spring, Summer, Fall	1977-1980	May	September	June-July				Primary	Sherman et al. 1987	F151
Redfish	Scotian Shelf	Spring, Summer	1978, 1979	May	July					Primary	O'Boyle et al. 1984	F 7
Sand Lance	Sable Island Bank, Middle Bank	Winter	<1996							Secondary	Breeze et al. 2002	F 39
Sand Lance	Western Scotian Shelf	Fall, Winter	1977-1980	January	February		November	December		Primary	Sherman et al. 1987	F151
Sea Raven	Western Scotian Shelf	Fall, Winter	1977-1980	October	December	November				Primary	Sherman et al. 1987	F151
Sea Scallop	Western Scotian Shelf	Fall	1977-1980	September	October	September				Primary	Sherman et al. 1987	F151
Silver Hake	Scotian Shelf	Summer, Fall	<1968	August	September					Primary/ Historical	Noskov et al. 1979	F145
Silver Hake	Middle Bank, Sable Island Bank	Summer, Fall	<1980	June	September					Secondary	Department of Fisheries and Oceans 1980	F184
Silver Hake	Western Bank, Sable Island Bank	Summer, Fall	<1982	June	October (early)	August-September				Secondary	Mobil Oil Canada Ltd. 1983.	F 29
Silver Hake	Scotian Shelf (shelf edge)	Spring, Summer	<1983	March	July	July				Primary	Scott 1983	F188
Silver Hake	Sable Island Bank, Western Bank, Emerald Bank, Banquereau Bank	Summer	<1983	July	July					Primary	Scott 1983	F188

Info Level: 'Primary' = original publication, 'Secondary' = another publication, 'Historical' = historical scientific knowledge and 'Anecdotal' = traditional knowledge

Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Silver Hake	Scotian Shelf	Fall	<1983	September	October					Secondary	Breeze et al. 2002	F 39
Silver Hake	Sable Island Bank, Western Bank, Banquereau Bank, Western Bank, Emerald Basin	Summer	<1983	July	July					Secondary	Breeze et al. 2002	F 39
Silver Hake	Scotian Shelf	Spring	<1983	March	March					Secondary	Breeze et al. 2002	F 39
Silver Hake	Scotian Shelf (northeast)	Fall	<1983	September	October					Primary	Scott 1983	F188
Silver Hake	Georges Bank, Gulf of Maine, Scotian Shelf	Spring, Summer, Fall	<1986	March	November					Secondary	Halliday et al. 1986	F 3
Silver Hake	Sable Bank, Western Bank, Banquereau Bank	Summer, Fall	<1999	June	September					Secondary	Breeze et al. 2002	F 39
Silver Hake	Sable Island Bank, Western Bank	Summer	<2002							Summary	DFO 2002	F186
Silver Hake	Sable Island Bank, Middle Bank	Summer	1963-1993	July	August	July-August				Primary	Rikhter et al. 2001	F139
Silver Hake	Banquereau Bank, Browns Bank, Emerald Bank, Sable Island Bank (western), Western Bank	Summer, Fall	1963-1993	June	September	July-August				Primary	Rikhter et al. 2001	F139
Silver Hake	Western Scotian Shelf	Summer, Fall	1977-1980	July	September	August-September				Primary	Sherman et al. 1987	F151
Silver Hake	Sable Island Bank, Western Bank, Emerald Bank	Summer, Fall	1977-1982	June (late)	September (mid)	July (end)				Primary	Sherstyukov 1991	F196
Silver Hake	Emerald Bank, Western Bank	Summer, Fall	1978	August	September					Primary	O'Boyle et al. 1984	F 7
Thorny Skate	Western Scotian Shelf	All year	1977-1980	January	December	October-December				Primary	Sherman et al. 1987	F151
White Hake	Bay of Fundy	Winter-Spring (early)	<1951							Secondary	Markle et al. 1982	F 71
White Hake	Scotian Shelf	Summer	<1982	July	August					Secondary	Mobil Oil Canada Ltd. 1983.	F 29
White Hake	Laurentian Channel, Emerald Bank, LaHave Bank	Summer	<1983	July	July					Secondary	Breeze et al. 2002	F 39
White Hake	Scotian Shelf	Summer	<1996	August	August	August				Secondary	Davis et al. 1998	F 32
White Hake	Western Scotian Shelf	Fall	1977-1980	September	November	September				Primary	Sherman et al. 1987	F151
Windowpane	Western Scotian Shelf	Summer, Fall	1977-1980	June	October	July				Primary	Sherman et al. 1987	F151
Winter Flounder	Bay of Fundy (Passamaquoddy Bay)	Spring	<1963			May				Secondary	Scott 1983	F188

Info Level: 'Primary' = original publication, 'Secondary' = another publication, 'Historical' = historical scientific knowledge and 'Anecdotal' = traditional knowledge

Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Winter Flounder	Sable Island Bank	Spring, Summer	<1982	March	June					Secondary	Mobil Oil Canada Ltd. 1983.	F 29
Winter Flounder	Western Scotian Shelf	Spring	1977-1980	April	May	May				Primary	Sherman et al. 1987	F151
Winter Skate	Western Scotian Shelf	Summer, Fall	1977-1980	August	November	September				Primary	Sherman et al. 1987	F151
Witch Flounder	Emerald Bank, Banquereau Banks	Spring, Summer	<1982	May (late)	August (early)	June-July				Secondary	Mobil Oil Canada Ltd. 1983.	F 29
Witch Flounder	Eastern Scotian Shelf, Banquereau Bank, Sable Island, Western Bank	Spring, Summer	<1983	March	July					Secondary	Breeze et al. 2002	F 39
Witch Flounder	Banquereau Bank	Spring, Summer	<1983	March	July	July				Primary	Scott 1983	F188
Witch Flounder	Banquereau Bank, Sable Island Bank, Western Bank, Browns Bank, Emerald Bank	Spring, Summer	<1983	March	July	July				Primary	Scott 1983	F188
Witch Flounder	Scotian Shelf	Spring, Summer, Fall	<2002	May	October	July-August				Summary	DFO 2002	F186
Witch Flounder	Banquereau Bank, Sable Island Bank, Scaterie Bank	Spring, Summer	1959-1970	May	October	July-August				Primary	Evseenko and Nevinsky 1975	F179
Witch Flounder	Western Scotian Shelf	Spring, Summer, Fall	1977-1980	April	September	May-June				Primary	Sherman et al. 1987	F151
Witch Flounder	Browns Bank, Emerald Bank	Spring, Summer, Fall	1979-1981	March	October	June				Primary	Brander and Hurley 1992	F 35
Yellowtail Flounder	Sable Island Bank, Banquereau Bank	Spring, Summer	<1982	May (late)	August (early)	June-July				Secondary	Mobil Oil Canada Ltd. 1983.	F 29
Yellowtail Flounder	Banquereau Bank, Sable Island, Western Bank, Browns Bank, Roseway Bank	All year	<1983	January	December					Secondary	Breeze et al. 2002	F 39
Yellowtail Flounder	Sable Island Bank, Western Bank	Summer	<1983	July	July					Primary	Scott 1983	F188
Yellowtail Flounder	Banquereau Bank, Sable Island, Western Bank, Browns Bank, Emerald Bank, Roseway Bank, Bay of Fundy	Summer	<1983	July	July					Primary	Scott 1983	F188
Yellowtail Flounder	Western Scotian Shelf	Summer	1977-1980	June	August	June				Primary	Sherman et al. 1987	F151

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APPENDIX E — DISTRIBUTION AND SEASONALITY OF FISH AND INVERTEBRATE EGGS ON THE SCOTIAN SHELF, 1914-2002.

Appendix E - Distribution and seasonality of fish and invertebrate eggs on the Scotian Shelf, 1914-2002.

Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
American Angler, Monkfish, Goosefish	Bay of Fundy, Scotian Shelf	Spring, Summer, Fall	1977-1982	May (mid)	September (mid)					Primary	Markle and Frost 1984	F 70
American Angler/ Monkfish Eggs	Scotian Shelf	Summer	1980-1980	June	June					Primary	Stewart et al. 2003	F183
American Plaice	Scotian Shelf (western)	Spring	1953-1971	March	April					Secondary	Colton and St. Onge 1974.	F189
American Plaice	Scataric Bank, Misaine Bank, Banquereau Bank, Laurentian Channel	Spring	1959-1970	April	May					Primary	Nevinsky and Serebryakov 1973	F 79
American Plaice	Scotian Shelf	Spring, Summer, Winter	1977-1981	February	June					Primary	Stewart et al. 2003	F183
American Plaice	Scotian Shelf	Spring, Summer, Winter	1977-1982	January	August					Primary	Markle and Frost 1984	F 70
American Plaice	Southwest Nova Scotia Shelf, Browns Bank, Western Scotian Shelf	Spring, Summer	1977-1987	April	June	April-May				Primary	Berrien and Sibunka 1999	F150
American Plaice	Northeast Channel	Spring	1977-1987	April	May					Primary	Berrien and Sibunka 1999	F150
American Plaice	Browns Bank, Baccaro Bank, La Have Bank	Spring	1978-1982	March	May	April				Primary	Neilson et al. 1988	F 78
American Plaice	Emerald Bank, Western Bank, Sable Island Bank, Middle Bank, Misaine Bank, Banquereau Bank, Canso Bank, Artimon Bank, St. Anns Bank	Spring	1978-1982	March	May	May				Primary	Neilson et al. 1988	F 78
American Plaice	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer, Winter	1983-1985	February	June					Primary	Stewart et al. 2003	F183
Atlantic Argentine	Scotian Shelf	Spring, Winter	1977-1982	February (mid)	May (mid)					Primary	Markle and Frost 1984	F 70
Atlantic Cod	Sable Island Bank, Banquereau Bank	Fall	<2000	September	October					Secondary	Breeze et al. 2002	F 39
Atlantic cod	Scotian Shelf (western)	Spring	1953-1971	March	April	April				Secondary	Colton and St. Onge 1974.	F189
Atlantic Cod	Lurcher Shoal, Southwest Nova Scotia Shelf,Gulf of Maine (coastal)	Spring, Fall, Winter	1975-1997	March	April		September	December		Primary	Hanke et al. 2000	F103
Atlantic Cod	Browns Bank, Western Bank, Sable Island Bank, Western Scotian Shelf (coastal)	Spring, Fall, Winter	1975-1997	March	April		September	December		Primary	Hanke et al. 2000	F103

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Atlantic Cod	Banquereau Bank, Misaine Bank, St. Anns Bank	Spring, Summer, Fall, Winter	1975-1997	May	August	May-June	September	December	November-December	Primary	Hanke et al. 2000	F103
Atlantic Cod	Scotian Shelf	All Year	1977-1982	January	December					Primary	Stewart et al. 2003	F183
Atlantic Cod	Scotian Shelf	Spring, Summer, Fall, Winter	1977-1982	September (mid)	July					Primary	Markle and Frost 1984	F 70
Atlantic Cod	Northeast Channel	Spring, Summer, Winter	1977-1987	March	June		December	December		Primary	Berrien and Sibunka 1999	F150
Atlantic Cod	Southwest Nova Scotia Shelf, Browns Bank, Western Scotian Shelf	Spring, Summer, Fall, Winter	1977-1987	January	June	April	October	December		Primary	Berrien and Sibunka 1999	F150
Atlantic Cod	Middle Bank	Spring	1979-1981	May	May		November	December		Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Browns Bank, Western Bank, Sable Island Bank, Middle Bank, Banquereau Bank	Fall, Winter	1979-1981							Primary	Frank et al. 1994	F 55
Atlantic Cod	Browns Bank	Spring, Fall	1979-1981	April	April		November	November		Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	LaHave Bank	Spring	1979-1981	March	March					Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Emerald Bank	Spring	1979-1981	March	March					Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Sydney Bight (coastal)	Spring, Summer	1979-1981	May	August					Secondary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Sable Island Bank	Spring, Fall, Winter	1979-1981	March	May		October	January		Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Banquereau Bank	Spring, Summer, Fall, Winter	1979-1981	March	June		October	December		Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Baccaro Bank	Spring	1979-1981	March	March					Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Misaine Bank	Spring, Summer	1979-1981	May	August	June-August				Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Eastern Scotian Shelf (coastal)	Spring, Fall, Winter (early)	1979-1981	March	May		November	December		Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Eastern Cape Breton (coastal),Scaterie Bank (coastal), St. Anns Bank (coastal)	Spring, Summer	1979-1981	May	June					Primary	Gagne and O'Boyle 1984	F109

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Atlantic Cod	Western Bank	Spring	1979-1981	March	April					Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Western Scotian Shelf (coastal)	Spring, Summer, Fall, Winter	1979-1981	March	June		November	December		Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Browns Bank, Southwest Nova Scotia Shelf Shelf	Winter, Spring, Summer	1983-1985	February (mid)	June (mid)	March-April				Primary	Campana et al. 1989	F 49
atlantic Cod	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer, Winter	1983-1985	February	June					Primary	Stewart et al. 2003	F183
Atlantic Cod	Scotian Shelf (western), Southwest Nova Scotia Shelf, Browns Bank, Baccaro Bank, Roseway Bank, Northeast Channel	Spring, Summer, Winter	1983-1985	February	June	April				Primary	Hurley and Campana 1989	F 57
Atlantic cod/ Haddock Eggs	Scotian Shelf	All Year	1979-1982	January	December					Primary	Stewart et al. 2003	F183
Atlantic Cod/ Haddock/ Witch Flounder	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer, Winter	1983-1985	February	June					Primary	Stewart et al. 2003	F183
Atlantic Cod/ Haddock/ Witch Flounder Eggs	Scotian Shelf	All Year	1976-1982	January	December					Primary	Stewart et al. 2003	F183
Atlantic Mackerel	Scotian Shelf	Spring, Summer	1977-1982	May	August					Primary	Stewart et al. 2003	F183
Atlantic Mackerel	Scotian Shelf	Spring, Summer	1977-1982	April (mid)	July (mid)					Primary	Markle and Frost 1984	F 70
Atlantic Mackerel	Northeast Channel	Spring, Summer	1977-1987	May	June					Primary	Berrien and Sibunka 1999	F150
Atlantic Mackerel	Southwest Nova Scotia Shelf, Browns Bank, Western Scotian Shelf	Spring, Summer	1977-1987	May	June					Primary	Berrien and Sibunka 1999	F150
Atlantic Mackerel	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	May	June					Primary	Stewart et al. 2003	F183
Brill-Windowpane Flounder Eggs	Scotian Shelf	Summer, Fall	1977-1982	July	September					Primary	Stewart et al. 2003	F183
Brill-Windowpane Flounder Eggs	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	May	June					Primary	Stewart et al. 2003	F183
Butterfish	Scotian Shelf	Summer, Fall	1977-1982	June (mid)	October (mid)					Primary	Markle and Frost 1984	F 70

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Cunner	Scotian Shelf	Spring, Summer	1976-1982	May	August					Primary	Stewart et al. 2003	F183
Cunner	Scotian Shelf	Spring, Summer, Fall	1977-1982	April (mid)	September (mid)					Primary	Markle and Frost 1984	F 70
Cunner	Southwest Nova Scotia Shelf	Fall	1977-1987	September	September					Primary	Berrien and Sibunka 1999	F150
Cunner	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring	1983-1985	April	April					Primary	Stewart et al. 2003	F183
Cunner/ Yellowtail Flounder Eggs	Scotian Shelf	Spring, Summer, Fall	1976-1982	March	September					Primary	Stewart et al. 2003	F183
Cunner/ Yellowtail Flounder Eggs	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer, Winter	1983-1985	February	June					Primary	Stewart et al. 2003	F183
Cusk	Scotian Shelf (western)	Spring, Summer	1953-1971	April	June	April-May				Secondary	Colton and St. Onge 1974.	F189
Cusk	Scotian Shelf	Spring, Summer, Fall	1976-1982	April	October					Primary	Stewart et al. 2003	F183
Cusk	Scotian Shelf	Spring, Summer	1977-1982	March (mid)	August (mid)					Primary	Markle and Frost 1984	F 70
Cusk	Southwest Nova Scotia Shelf, Western Scotian Shelf	Spring, Summer, Fall	1977-1987	April	July	May-June	September	October		Primary	Berrien and Sibunka 1999	F150
Cusk	Northeast Channel	Spring, Summer	1977-1987	April	June	May				Primary	Berrien and Sibunka 1999	F150
Cusk	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	April	June					Primary	Stewart et al. 2003	F183
Cusk/ Atlantic mackerel Eggs	Scotian Shelf	Spring, Summer, Fall	1977-1982	May	September					Primary	Stewart et al. 2003	F183
Fish Eggs	Scotian Shelf	All Year	1976-1982	January	December					Primary	Stewart et al. 2003	F183
Fish Eggs	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer, Winter	1983-1985	February	June					Primary	Stewart et al. 2003	F183
Fourbeard Rockling	Bay of Fundy	Spring, Summer	1953-1971	May	June					Secondary	Colton and St. Onge 1974.	F189
Fourbeard Rockling	Scotian Shelf	Spring, Summer, Fall	1976-1982	May	October					Primary	Stewart et al. 2003	F183
Fourbeard Rockling	Scotian Shelf	Spring, Summer, Fall	1977-1982	March	September					Primary	Markle and Frost 1984	F 70

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Fourbeard Rockling	Southwest Nova Scotia Shelf, Western Scotian Shelf	Spring, Summer, Fall	1977-1987	April	June	May-June	September	October		Primary	Berrien and Sibunka 1999	F150
Fourbeard Rockling	Northeast Channel	Spring, Summer	1977-1987	May	June					Primary	Berrien and Sibunka 1999	F150
Fourbeard Rockling	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	May	June					Primary	Stewart et al. 2003	F183
Gulf Stream Flounder	Scotian Shelf	Summer, Fall	1976-1982	June	October					Primary	Stewart et al. 2003	F183
Gulf Stream Flounder	Scotian Shelf	Summer, Fall	1977-1982	June (mid)	October (mid)					Primary	Markle and Frost 1984	F 70
Gulf Stream Flounder	Southwest Nova Scotia Shelf	Summer, Fall	1977-1987	June	October					Primary	Berrien and Sibunka 1999	F150
Haddock	Bay of Fundy	Spring, Summer	1953-1971	April	June	May				Secondary	Colton and St. Onge 1974.	F189
Haddock	Scotian Shelf (western)	Spring, Summer	1953-1971	March	June	April				Secondary	Colton and St. Onge 1974.	F189
Haddock	Emerald Bank, Western Bank, Sable Island Bank	Spring, Summer	1975-1997	March	June	March-April				Primary	Hanke et al. 2001b	F102
Haddock	Southwest Nova Scotia Shelf, Gulf of Maine	Spring, Summer	1975-1997	March	June	May-June				Primary	Hanke et al. 2001b	F102
Haddock	Browns Bank, Baccaro Bank, Western Scotian Shelf (coastal)	Spring, Summer	1975-1997	March-June	June	May-June				Primary	Hanke et al. 2001b	F102
Haddock	Banquereau Bank	Spring, Summer	1975-1997	May	June					Primary	Hanke et al. 2001b	F102
Haddock	Browns Bank	Spring	1977-1982	April	May	May				Primary	Smith and Morse 1985	F 26
Haddock	Scotian Shelf	Spring, Summer, Winter	1977-1982	January	June					Primary	Stewart et al. 2003	F183
Haddock	Scotian Shelf	Spring, Summer, Winter	1977-1982	January	July					Primary	Markle and Frost 1984	F 70
Haddock	German Bank	Spring	1977-1982	April	May	May				Primary	Smith and Morse 1985	F 26
Haddock	Southwest Nova Scotia Shelf, Browns Bank, Western Scotian Shelf	Spring, Summer	1977-1987	January	June	April-May				Primary	Berrien and Sibunka 1999	F150
Haddock	Northeast Channel	Spring, Summer, Winter	1977-1987	February	June	April				Primary	Berrien and Sibunka 1999	F150

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Haddock	Scotian Shelf	Spring, Summer	1978	April	July	May-July				Secondary	Davis et al. 1998	F 32
Haddock	Emerald-Western, Sable Island Banks	Spring	1979	April	May					Primary	O'Boyle et al. 1984	F 7
Haddock	Browns Bank, Georges Bank	Spring, Winter	1979-1981	February		April				Primary	Brander and Hurley 1992	F 35
Haddock	Browns Bank, Southwest Nova Scotia Shelf Shelf	Spring, Summer	1983-1985	March	June	April-May				Primary	Campana et al. 1989	F 49
Haddock	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer, Winter	1983-1985	February	June					Primary	Stewart et al. 2003	F183
Haddock	Scotian Shelf (western), Southwest Nova Scotia Shelf, Browns Bank, Baccaro Bank, Roseway Bank, Northeast Channel	Spring, Summer, Winter	1983-1985	February-April	June	April-June				Primary	Hurley and Campana 1989	F 57
Hake	Scotian Shelf	Spring, Summer, Fall	1976-1982	May	October					Primary	Stewart et al. 2003	F183
Hake	Scotian Shelf	Spring, Summer, Fall	1977-1982	May (mid)	October (mid)					Primary	Markle and Frost 1984	F 70
Hake	Northeast Channel	Fall	1977-1987	September	September					Primary	Berrien and Sibunka 1999	F150
Hake	Southwest Nova Scotia Shelf, Browns Bank, Western Scotian Shelf	Spring, Summer, Fall	1977-1987	May	October	September				Primary	Berrien and Sibunka 1999	F150
Hake	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Summer	1983-1985	June	June					Primary	Stewart et al. 2003	F183
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Scotian Shelf	Spring, Summer, Fall, Winter	1976-1982	January	November					Primary	Stewart et al. 2003	F183
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer, Winter	1983-1985	February	June					Primary	Stewart et al. 2003	F183
Long-finned Hake	Scotian Shelf	Fall, Winter	1977-1982	January	February (mid)		October (mid)	December		Primary	Markle and Frost 1984	F 70
Muller's Pearlside	Scotian Shelf	Summer, Fall	1977-1982	August (mid)	September (mid)					Primary	Markle and Frost 1984	F 70
Muller's Pearlside	Northeast Channel	Winter	1977-1987	February	February					Primary	Berrien and Sibunka 1999	F150

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Offshore Hake	Scotian Shelf	Spring, Summer, Fall, Winter	1976-1982	January	October					Primary	Stewart et al. 2003	F183
Offshore Hake	Scotian Shelf	All year	1977-1982	January	December					Primary	Markle and Frost 1984	F 70
Offshore Hake	Western Scotian Shelf, Browns Bank	Spring, Fall, Winter	1977-1987	May	December					Primary	Berrien and Sibunka 1999	F150
Pollock	Scotian Shelf	Spring, Fall, Winter	<1985	September	March					Secondary	Davis et al. 1998	F 32
Pollock	Browns Bank	Spring, Summer, Fall, Winter	<2001	January	June		September	December		Secondary	Breeze et al. 2002	F 39
Pollock	Scotian Shelf	Fall, Winter	<2001	January	February		September	December		Secondary	Breeze et al. 2002	F 39
Pollock	Bay of Fundy	Fall, Winter	1975-1997	September	December	November-December				Primary	Hanke et al. 2001a	F101
Pollock	Southwest Nova Scotia Shelf, Gulf of Maine	Spring, Fall, Winter	1975-1997	January	April		September	December	November-December	Primary	Hanke et al. 2001a	F101
Pollock	Browns Bank, Western Scotian Shelf (coastal)	Spring, Summer, Fall, Winter	1975-1997	January	June	January-February	September	December	November-December	Primary	Hanke et al. 2001a	F101
Pollock	Banquereau Bank	Fall, Winter	1975-1997	January	February		November	December		Primary	Hanke et al. 2001a	F101
Pollock	Emerald Bank, Western Bank, Sable Island Bank	Spring, Fall, Winter	1975-1997	January	February		November	December		Primary	Hanke et al. 2001a	F101
Pollock	Scotian Shelf	All Year	1976-1982	January	December					Primary	Stewart et al. 2003	F183
Pollock	Scotian Shelf	Spring, Summer, Fall, Winter	1977-1982	January	March (mid)		August (mid)	December		Primary	Markle and Frost 1984	F 70
Pollock	Southwest Nova Scotia Shelf, Browns Bank, Western Scotian Shelf	Spring, Summer, Fall, Winter	1977-1987	January	April	January	October	December	December	Primary	Berrien and Sibunka 1999	F150
Pollock	Northeast Channel	Spring, Fall, Winter	1977-1987	January	April	February	October	December		Primary	Berrien and Sibunka 1999	F150
Pollock	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer,Winter	1983-1985	February	June					Primary	Stewart et al. 2003	F183
Silver Hake	Scotian Shelf	Spring, Summer, Fall	1976-1982	April	October					Primary	Stewart et al. 2003	F183

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Silver Hake	Banquereau Bank, Browns Bank, Emerald Bank, Sable Island Bank (western), Western Bank	Summer, Fall	1977-1978	August	September	August				Primary	Rikhter et al. 2001	F139
Silver Hake	Scotian Shelf	Spring, Summer, Fall	1977-1982	April	November (mid)					Primary	Markle and Frost 1984	F 70
Silver Hake	Northeast Channel	Spring, Summer, Fall	1977-1987	May	September					Primary	Berrien and Sibunka 1999	F150
Silver Hake	Southwest Nova Scotia Shelf, Browns Bank, Western Scotian Shelf	Spring, Summer, Fall	1977-1987	May	November					Primary	Berrien and Sibunka 1999	F150
Silver Hake	Browns Bank, Emerald Bank, Western Bank, Banquereau Bank	Summer, Fall	1978	August	September					Primary	O'Boyle et al. 1984	F 7
Silver Hake	Scotian Shelf	Summer, Fall	1978-1982	July	October					Secondary	Neilson et al. 1988	F 78
Silver Hake	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	May	June					Primary	Stewart et al. 2003	F183
Silver Hake/ Longfinned Hake/ Fourbeard Rockling Eggs	Scotian Shelf	Spring	1977-1978	March	May					Primary	Stewart et al. 2003	F183
Smallmouth Flounder	Southwest Nova Scotia Shelf	Summer, Fall	1977-1987	June	October					Primary	Berrien and Sibunka 1999	F150
White Hake	Scotian Shelf	Summer, Fall	<1982	August	September					Secondary	Fahay and Able 1989	F 38
Windowpane	Scotian Shelf	Summer, Fall	1977-1982	June (mid)	October (mid)					Primary	Markle and Frost 1984	F 70
Windowpane	Browns Bank, Western Scotian Shelf	Summer	1977-1987	June	July					Primary	Berrien and Sibunka 1999	F150
Winter Flounder	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring	1983-1985	April	May					Primary	Stewart et al. 2003	F183
Witch Flounder	Scotian Shelf	Spring, Summer,Fall	1976-1982	May	October					Primary	Stewart et al. 2003	F183
Witch Flounder	Scotian Shelf	Spring, Summer, Fall	1977-1982	March	September					Primary	Markle and Frost 1984	F 70
Witch Flounder	Southwest Nova Scotia Shelf, Western Scotian Shelf	Summer, Fall	1977-1987	June	September					Primary	Berrien and Sibunka 1999	F150
Witch Flounder	Sable Island Bank, Banquereau Banks	Summer, Fall	1978-1982	August	September	August				Primary	Neilson et al. 1988	F 78
Witch Flounder	Western Scotian Shelf (inshore)	Summer	1978-1982	June	June					Primary	Neilson et al. 1988	F 78

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Witch Flounder	Emerald Bank, Browns Bank	Spring	1978-1982	May	June	June				Primary	Neilson et al. 1988	F 78
Witch Flounder	Browns Bank, Emerald Bank	Spring, Summer, Fall	1979-1981	March	October	June				Primary	Brander and Hurley 1992	F 35
Witch Flounder	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Summer	1983-1985	June	June					Primary	Stewart et al. 2003	F183
Yellowtail Flounder	Scotian Shelf	Spring, Summer	1976-1982	April	August					Primary	Stewart et al. 2003	F183
Yellowtail Flounder	Scotian Shelf	Spring, Summer	1977-1982	April (mid)	July					Primary	Markle and Frost 1984	F 70
Yellowtail Flounder	Southwest Nova Scotia Shelf, Browns Bank, Western Scotian Shelf	Spring, Summer	1977-1987	April	June					Primary	Berrien and Sibunka 1999	F150
Yellowtail Flounder	Northeast Channel	Spring, Summer	1977-1987	May	June					Primary	Berrien and Sibunka 1999	F150
Yellowtail Flounder	Banquereau Bank	Summer	1978-1982	August	August	August				Primary	Neilson et al. 1988	F 78
Yellowtail Flounder	Sable Island Bank	Spring, Summer	1978-1982	April	July					Primary	Neilson et al. 1988	F 78
Yellowtail Flounder	Browns, Sable Island Bank, Western Bank, Southwest Nova Scotia Shelf	Spring, Summer	1978-1982	May	July	May				Primary	Neilson et al. 1988	F 78
Yellowtail Flounder	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	March	June					Primary	Stewart et al. 2003	F183

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APPENDIX F — DISTRIBUTION AND SEASONALITY OF FISH AND INVERTEBRATE LARVAE ON THE SCOTIAN SHELF, 1914-2002.

Appendix F - Distribution and seasonality of fish and invertebrate larvae on the Scotian Shelf, 1914-2002.

Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Alligatorfish	Scotian Shelf	Spring	1979-1980	May	May					Primary	Stewart et al. 2003	F183
Alligatorfish	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	April	June					Primary	Stewart et al. 2003	F183
American Angler, Monkfish, Goosefish	Scotian Shelf	Summer, Fall	1976-1982	July	October					Primary	Stewart et al. 2003	F183
American Plaice	Scotian Shelf (western)	Spring, Summer	1953-1971	May, July	August					Secondary	Colton and St. Onge 1974.	F189
American Plaice	Bay of Fundy	Summer	1953-1971	July	August					Secondary	Colton and St. Onge 1974.	F189
American Plaice	Scotian Shelf	Spring, Summer, Fall	1976-1982	April	October	May-June				Primary	Breeze et al. 2002	F 39
American Plaice	Scotian Shelf	Spring, Summer	1976-1982	April	August					Primary	Stewart et al. 2003	F183
American Plaice	Scotian Shelf	Spring, Summer	1978, 1979	April	July					Primary	O'Boyle et al. 1984	F 7
American Plaice	Emerald Bank	Spring	1978-1982	March-April	May	May				Primary	Neilson et al. 1988	F 78
American Plaice	Western Bank, Sable Island Bank, Middle Bank	Spring	1978-1982	April	May	May				Primary	Neilson et al. 1988	F 78
American Plaice	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	April	June					Primary	Stewart et al. 2003	F183
Anglemouth	Scotian Shelf	Fall	1978-1982	September	September					Primary	Stewart et al. 2003	F183
Arctic Shanny	Scotian Shelf	Spring, Summer	1979-1980	May	June					Primary	Stewart et al. 2003	F183
Arctic Shanny	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring	1983-1985	May	May					Primary	Stewart et al. 2003	F183
Atlantic Cod	Eastern Scotian Shelf (St. Margarets Bay)	Fall, Winter	1933-1938	October	December (late)					Primary	McKenzie 1940	F193
Atlantic Cod	Eastern Scotian Shelf (Halifax Harbour)	Fall, Winter	1933-1938	October	December (late)					Primary	McKenzie 1940	F193
Atlantic Cod	Lurcher Shoal, Southwest Nova Scotia Shelf, Gulf of Maine (coastal)	Spring, Fall, Winter	1975-1997	March	April		September	December		Primary	Hanke et al. 2000	F103

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Atlantic Cod	Browns Bank, Western Bank, Sable Island Bank, Western Scotian Shelf (coastal)	Spring, Summer, Fall, Winter	1975-1997	March	June		November	December		Primary	Hanke et al. 2000	F103
Atlantic Cod	Banquereau Bank	Fall, Winter	1975-1997	November	December					Primary	Hanke et al. 2000	F103
Atlantic Cod	Emerald Bank, Western Bank, Sable Island Bank, Middle Bank, Banquereau Bank	All Year	1976-1982	January	August	April-May	September	December	November-December	Primary	Breeze et al. 2002	F 39
Atlantic Cod	Scotian Shelf	All Year	1977-1982	January	December					Primary	Stewart et al. 2003	F183
Atlantic Cod	Emerald Bank, Western Bank	Spring (early), Fall, Winter	1979	January	April		November	December		Primary	O'Boyle et al. 1984	F 7
Atlantic Cod	Browns Bank	Spring, Summer	1979-1981	April	June					Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Sable Island Bank	Spring, Summer, Fall, Winter	1979-1981	January	June		October	December		Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	LaHave Bank	Spring, Summer	1979-1981	April	June					Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Western Bank	Spring, Summer, Winter	1979-1981	January	January		March	June		Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Misaine Bank	Spring, Summer, Fall, Winter	1979-1981	May	December					Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Eastern Scotian Shelf (coastal)	Spring, Summer, Winter	1979-1981	April	June		December	December		Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Sydney Bight(coastal)	Summer	1979-1981	June	June					Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Middle Bank	Spring, Summer, Fall	1979-1981	April	June		November	November		Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Western Scotian Shelf (South Shore, Western Shore)	Spring, Summer, Fall, Winter	1979-1981	February	June		November	December		Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Emerald Bank	Spring, Summer, Winter	1979-1981	January	January		March	June		Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Banquereau Bank	Spring, Summer, Fall, Winter	1979-1981	May	December					Primary	Gagne and O'Boyle 1984	F109
Atlantic Cod	Browns Bank, Southwest Nova Scotia Shelf	Winter, Spring, Summer	1983-1985	February (mid)	June (mid)	April-May				Primary	Campana et al. 1989	F 49

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Atlantic Cod	Scotian Shelf (western), Southwest Nova Scotia Shelf, Browns Bank, Baccaro Bank, Roseway Bank, Northeast Channel	Spring, Summer	1983-1985	March	June	April-May				Primary	Hurley and Campana 1989	F 57
Atlantic Cod	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer,Winter	1983-1985	February	June					Primary	Stewart et al. 2003	F183
Atlantic Cod	Sable Island Bank, Western Bank, Emerald Bank, Middle Bank	Fall, Winter	1991-1992	January	February (early)		November (early)	December	November (late)	Primary	Meekan and Fortier 1996	F 74
Atlantic Cod	Sable Island Bank, Western Bank, Emerald Bank, Middle Bank	Fall, Winter	1992-1993	January	February (late)		October (mid)	December	November (late)	Primary	Meekan and Fortier 1996	F 74
Atlantic Herring	Scotian Shelf (western)	All Year	1953-1971	April	May		October	January	November	Secondary	Colton and St. Onge 1974.	F189
Atlantic Herring	Bay of Fundy	All Year	1953-1971	April	September	May	October	January	October-December	Secondary	Colton and St. Onge 1974.	F189
Atlantic Herring	Scotian Shelf	Spring, Summer, Fall, Winter	1967-1969	January	June	March-April	September	December	October-November	Primary	Sameoto 1972	F142
Atlantic Herring	Scotian Shelf	Spring, Summer, Fall, Winter	1976-1982	January	July	February-March	September	December	November	Primary	Breeze et al. 2002	F 39
Atlantic Herring	Scotian Shelf	All Year	1977-1982	January	December					Primary	Stewart et al. 2003	F183
Atlantic Herring	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer,Winter	1983-1985	February	June					Primary	Stewart et al. 2003	F183
Atlantic Herring	Gulf of Maine, Bay of Fundy(outer)	Fall	1986	September	October					Primary	Chenoweth et al. 1989	F 50
Atlantic Herring	Sable Island Bank, Western Bank	Fall	1997	October (mid)	November (early)					Primary	Harris and Stephenson 1999	F 28
Atlantic Herring/ Capelin-like	Scotian Shelf	Fall	1979-1980	November	November					Primary	Stewart et al. 2003	F183
Atlantic Mackerel	Scotian Shelf	Summer	1976-1982	June	August					Primary	Stewart et al. 2003	F183
Atlantic Mackerel	Sable Island Bank	Summer	1991-1992	June	August					Primary	Fortier and Villeneuve 1996	F195
Atlantic Rock Crab	Scotian Shelf	Summer, Fall	1977-1978	July	September					Primary	Roff et al. 1986	F 27
Atlantic Seasnail	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Summer	1983-1985	June	June					Primary	Stewart et al. 2003	F183

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Atlantic Wolffish	Scotian Shelf	Spring, Winter	1977-1981	February	May					Primary	Stewart et al. 2003	F183
Atlantic Wolffish	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Winter	1983-1985	February	April					Primary	Stewart et al. 2003	F183
Barracudinas	Scotian Shelf	Spring	1977-1977	March	March					Primary	Stewart et al. 2003	F183
Butterfish	Scotian Shelf	Fall	1979-1982	September	September					Primary	Stewart et al. 2003	F183
Capelin	St. Anns Bank, St. Anns Basin, Misaine Bank, Banquereau Bank, Eastern Scotian Shelf (coastal)	Spring, Summer, Fall, Winter	1976-1982	January	May	April	August	October	August	Primary	Breeze et al. 2002	F 39
Capelin	Scotian Shelf	Spring, Summer,Winter	1976-1982	February	August					Primary	Stewart et al. 2003	F183
Crab	Western Scotian Shelf	Summer, Fall	1977-1978	July (mid)	September (mid)					Primary	Roff et al. 1986	F 27
Crab	Western Scotian Shelf	Summer, Fall	1977-1978	July (mid)	September (mid)					Primary	Roff et al. 1986	F 27
Cunner	Scotian Shelf	Summer, Fall	1976-1982	July	October					Primary	Stewart et al. 2003	F183
Cusk	Scotian Shelf	Spring, Summer	1979-1980	May	June					Primary	Stewart et al. 2003	F183
Cusk	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Summer	1983-1985	June	June					Primary	Stewart et al. 2003	F183
Cusk Eel	Scotian Shelf	Fall	1977-1977	October	October					Primary	Stewart et al. 2003	F183
Deep Sea Red Crab	Scotian Shelf	Summer, Fall	1977-1978	July	September					Primary	Roff et al. 1986	F 27
Flounder	Scotian Shelf	Summer, Fall	1977-1982	August	October					Primary	Stewart et al. 2003	F183
Flounder Unidentified	Scotian Shelf	Summer	1976-1977	August	August					Primary	Stewart et al. 2003	F183
Flounder Unidentified	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Summer	1983-1985	June	June					Primary	Stewart et al. 2003	F183
Fourbeard Rockling	Scotian Shelf (western)	Summer	1953-1971	July	August					Secondary	Colton and St. Onge 1974.	F189
Fourbeard Rockling	Scotian Shelf	Summer, Fall	1976-1982	June	November					Primary	Stewart et al. 2003	F183
Fourbeard Rockling	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Summer	1983-1985	June	June					Primary	Stewart et al. 2003	F183

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Fourbeard Rockling/ Hake	Scotian Shelf	Summer, Fall	1976-1982	August	October					Primary	Stewart et al. 2003	F183
Gadoids	Scotian Shelf	Fall	1979-1982	September	October					Primary	Stewart et al. 2003	F183
Glacier Lanternfish	Scotian Shelf	Spring, Summer	1978-1982	April	August					Primary	Stewart et al. 2003	F183
Glacier Lanternfish	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	April	June					Primary	Stewart et al. 2003	F183
Gobies unidentified	Scotian Shelf	Fall	1977-1977	October	October					Primary	Stewart et al. 2003	F183
Green crab	Western Scotian Shelf	Summer, Fall	1977-1978	July	September					Primary	Roff et al. 1986	F 27
Gulf Stream Flounder	Scotian Shelf	Summer, Fall	1977-1982	August	October					Primary	Stewart et al. 2003	F183
Haddock	Southwest Nova Scotia Shelf, Gulf of Maine	Spring, Summer	1975-1997	May	August	May-June				Primary	Hanke et al. 2001b	F102
Haddock	Browns Bank, Baccaro Bank, Western Scotian Shelf (coastal)	Spring, Summer	1975-1997	March	June	May-June				Primary	Hanke et al. 2001b	F102
Haddock	Emerald Bank, Western Bank, Sable Island Bank	Spring, Summer	1975-1997	March	June					Primary	Hanke et al. 2001b	F102
Haddock	Scotian Shelf	Spring, Summer	1976-1982	April	August	April-June				Primary	Breeze et al. 2002	F 39
Haddock	Scotian Shelf	Spring, Summer	1977-1981	April	June					Primary	Stewart et al. 2003	F183
Haddock	Browns Bank, German Bank	Spring, Summer	1977-1982	April	June	May				Primary	Smith and Morse 1985	F 26
Haddock	Emerald Bank	Spring	1979	April	May					Primary	O'Boyle et al. 1984	F 7
Haddock	Scotian Shelf (western), Southwest Nova Scotia Shelf, Browns Bank, Baccaro Bank, Roseway Bank, Northeast Channel	Spring, Summer, Winter	1983-1985	May	June	June				Primary	Hurley and Campana 1989	F 57
Haddock	Browns Bank, Southwest Nova Scotia Shelf Shelf	Spring, Summer	1983-1985	April	June	June				Primary	Campana et al. 1989	F 49
Haddock	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	March	June					Primary	Stewart et al. 2003	F183
Hake	Scotian Shelf	Summer, Fall	1976-1982	July	November					Primary	Stewart et al. 2003	F183
Horned Lanternfish	Scotian Shelf	Summer, Fall	1976-1982	August	October					Primary	Stewart et al. 2003	F183

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Inquiline Seasnail	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	April	June					Primary	Stewart et al. 2003	F183
Jonah Crab	Scotian Shelf	Summer, Fall	1977-1978	July	September					Primary	Roff et al. 1986	F 27
Lampanyctus sp.	Scotian Shelf	Summer	1978-1982	August	August					Primary	Stewart et al. 2003	F183
Lanternfish	Scotian Shelf (western)	Fall	1953-1971	September	November					Secondary	Colton and St. Onge 1974.	F189
Lanternfish	Scotian Shelf	Spring, Summer, Fall	1977-1981	April	October					Primary	Stewart et al. 2003	F183
Lanternfish	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	April	June					Primary	Stewart et al. 2003	F183
Lefteye Flounder	Scotian Shelf	Summer, Fall	1977-1977	August	September					Primary	Stewart et al. 2003	F183
Lesser Toad Crab	Scotian Shelf	Summer, Fall	1977-1978	July	September					Primary	Roff et al. 1986	F 27
Little Grubby	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	May	June					Primary	Stewart et al. 2003	F183
Longhorn Sculpin	Scotian Shelf	Spring	1977-1981	April	May					Primary	Stewart et al. 2003	F183
Longhorn Sculpin	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring	1983-1985	March	May					Primary	Stewart et al. 2003	F183
Northern Sand Lance	Bay of Fundy	Spring, Summer, Winter	1953-1971	January, April	July-August	May				Secondary	Colton and St. Onge 1974.	F189
Northern Sand Lance	Scotian Shelf (western)	Spring, Summer, Winter	1953-1971	January, March	July-August	April				Secondary	Colton and St. Onge 1974.	F189
Northern Sand Lance	Emerald Bank	Spring, Winter	1967-1970	February	May					Primary	Scott 1972	F144
Northern Sand Lance	Middle Bank, Banquereau Bank, Western Bank, Emerald Bank, Baccaro Bank, Browns Bank	Spring, Winter	1967-1970	February	April	February-March				Primary	Scott 1972	F144
Offshore Hake	Scotian Shelf	Summer, Fall	1977-1982	August	November					Primary	Stewart et al. 2003	F183
Paralepis coregonoides	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring	1983-1985	March	April					Primary	Stewart et al. 2003	F183
Pollock	Scotian Shelf (western)	All Year	1953-1971	January	January		March	May		Secondary	Colton and St. Onge 1974.	F189

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Pollock	Bay of Fundy	All Year	1953-1971	January	January		April	June		Secondary	Colton and St. Onge 1974.	F189
Pollock	Bay of Fundy	Spring	1975-1997	March	April					Primary	Hanke et al. 2001a	F101
Pollock	Browns Bank, Western Scotian Shelf (coastal)	Spring, Fall, Winter	1975-1997	January	April	January-February	November	December		Primary	Hanke et al. 2001a	F101
Pollock	Emerald Bank, Western Bank, Sable Island Bank	Spring, Fall, Winter	1975-1997	January	April	January-February	November	December		Primary	Hanke et al. 2001a	F101
Pollock	Southwest Nova Scotia Shelf, Gulf of Maine	Spring, Fall, Winter	1975-1997	January	April	March-April	September	December	November-December	Primary	Hanke et al. 2001a	F101
Pollock	Emerald Bank, Western Bank, Sable Island Bank	Spring, Fall, Winter	1976-1982	January	May	January-February	November	December		Primary	Breeze et al. 2002	F 39
Pollock	Scotian Shelf	All Year	1977-1982	January	December					Primary	Stewart et al. 2003	F183
Pollock	Emerald Bank, Western Bank	Fall, Winter	1979	January	February	January	November	December	December	Primary	O'Boyle et al. 1984	F 7
Pollock	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer, Winter	1983-1985	February	June					Primary	Stewart et al. 2003	F183
Protomyctophum arcticum	Scotian Shelf	Summer	1980-1980	June	June					Primary	Stewart et al. 2003	F183
Radiated shanny	Bay of Fundy	Spring, Summer	1953-1971	April	July-August					Secondary	Colton and St. Onge 1974.	F189
Radiated Shanny	Scotian Shelf	Spring, Summer,Fall	1977-1982	May	October					Primary	Stewart et al. 2003	F183
Radiated Shanny	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	May	June					Primary	Stewart et al. 2003	F183
Red Hake	Scotian Shelf (western)	Summer, Fall	1953-1971	July-August	November	September				Secondary	Colton and St. Onge 1974.	F189
Redfish	Scotian Shelf	Spring, Summer, Fall (early)	<1984	March	September	May-August				Secondary	Davis et al. 1998	F 32
Redfish	Scotian Shelf	Spring, Summer, Fall	<1984	March	September	May-August				Secondary	Drinkwater et al. 2000	F 98
Redfish	Scotian Shelf	Spring, Summer, Fall	<2000	March	October					Secondary	Breeze et al. 2002	F 39
Redfish	Scotian Shelf (western)	Spring, Summer, Fall	1953-1971	April	May		July	September	July-August	Secondary	Colton and St. Onge 1974.	F189

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Redfish	Bay of Fundy	Summer	1953-1971	July	August					Secondary	Colton and St. Onge 1974.	F189
Redfish	Scotian Shelf	Spring, Summer, Fall	1976-1982	February	October	March			June-July	Primary	Breeze et al. 2002	F 39
Redfish	Scotian Shelf	Spring, Summer,Fall	1976-1982	March	October					Primary	Stewart et al. 2003	F183
Redfish	Scotian Shelf	Spring, Summer	1978, 1979	April	July					Primary	O'Boyle et al. 1984	F 7
Redfish	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	March	June					Primary	Stewart et al. 2003	F183
Rock Gunnel	Bay of Fundy	Spring	1953-1971	April	May					Secondary	Colton and St. Onge 1974.	F189
Rock Gunnel	Scotian Shelf	Spring	1977-1981	March	April					Primary	Stewart et al. 2003	F183
Rock Gunnel	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring	1983-1985	March	May					Primary	Stewart et al. 2003	F183
Sand Lance	Scotian Shelf	All year	1976-1982	January	December	January-February				Primary	Breeze et al. 2002	F 39
Sand Lance	Scotian Shelf	All Year	1977-1982	January	December					Primary	Stewart et al. 2003	F183
Sand Lance	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer,Winter	1983-1985	February	June					Primary	Stewart et al. 2003	F183
Sculpin	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring	1983-1985	April	April					Primary	Stewart et al. 2003	F183
Sculpin (NS)	Scotian Shelf	Spring, Winter	1977-1982	January	April					Primary	Stewart et al. 2003	F183
Sculpin (NS)	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Winter	1983-1985	February	April					Primary	Stewart et al. 2003	F183
Sculpins	Bay of Fundy	Spring, Winter	1953-1971	January	May					Secondary	Colton and St. Onge 1974.	F189
Sculpins	Scotian Shelf (western)	Spring, Winter	1953-1971	January	May					Secondary	Colton and St. Onge 1974.	F189
Sea Raven	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring	1983-1985	May	May					Primary	Stewart et al. 2003	F183
Seasnail	Scotian Shelf	Spring, Summer	1976-1982	April	August					Primary	Stewart et al. 2003	F183

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Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Seasnail	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	April	June					Primary	Stewart et al. 2003	F183
Shanny unidentified	Scotian Shelf	Spring	1977-1981	March	May					Primary	Stewart et al. 2003	F183
Short-finned Squid	Emerald Bank, LaHave Banks, Georges Bank, Grand Banks	Summer	<1989	June	June					Historical	Underwater World 1989	F 42
Short-finned Squid	Scotian Shelf	Summer, Fall	<1989	July	September					Historical	Underwater World 1989	F 42
Short-finned Squid	Grand Banks, Georges Bank, Mid-Atlantic Bight	Spring, Summer	<1989	April	June					Historical	Underwater World 1989	F 42
Shorthorn Sculpin	Scotian Shelf	Spring, Summer	1977-1980	May	June					Primary	Stewart et al. 2003	F183
Shorthorn Sculpin	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring	1983-1985	May	May					Primary	Stewart et al. 2003	F183
Shrimp Eel	Scotian Shelf	Summer	1978-1982	August	August					Primary	Stewart et al. 2003	F183
Silver Hake	Scotian Shelf (western)	Summer, Fall	1953-1971	July-August	November	September				Secondary	Colton and St. Onge 1974.	F189
Silver Hake	Scotian Shelf	Summer, Fall	1976-1982	July	November					Primary	Stewart et al. 2003	F183
Silver Hake	Scotian Shelf	Summer, Fall	1976-1982	June	October	July				Primary	Breeze et al. 2002	F 39
Silver Hake	Banquereau Bank, Browns Bank, Emerald Bank, Sable Island Bank (western), Western Bank	Summer, Fall	1977-1978	August	September	August				Primary	Rikhter et al. 2001	F139
Silver Hake	Emerald Bank, Western Bank, Banquereau Bank	Summer	1978	August	September					Primary	O'Boyle et al. 1984	F 7
Snake Blenny	Scotian Shelf (western)	Spring, Summer	1953-1971	April	July-August					Secondary	Colton and St. Onge 1974.	F189
Snake Blenny	Scotian Shelf	Spring, Winter	1977-1981	February	May					Primary	Stewart et al. 2003	F183
Snake Blenny	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring	1983-1985	April	April					Primary	Stewart et al. 2003	F183
Snow crab	Scotian Shelf	Summer, Fall	1977-1978	July	September					Primary	Roff et al. 1986	F 27
Toad Crab	Scotian Shelf	Summer, Fall	1977-1978	July	September					Primary	Roff et al. 1986	F 27
Unidentified Fish	Scotian Shelf	All Year	1976-1982	January	December					Primary	Stewart et al. 2003	F183

Info Level: 'Primary' = original publication, 'Secondary' = another publication, 'Historical' = historical scientific knowledge and 'Anecdotal' = traditional knowledge

Species	Location	Season	Year	First Period			Second Period			Info Level	Source	Ref.
				Month Begin	Month End	Peak	Month Begin	Month End	Peak			
Unidentified Fish	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer, Winter	1983-1985	February	June					Primary	Stewart et al. 2003	F183
White Barracudina	Scotian Shelf	Fall	1977-1982	September	October					Primary	Stewart et al. 2003	F183
White Barracudina	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer, Winter	1983-1985	February	June					Primary	Stewart et al. 2003	F183
White Hake	Scotian Shelf	Spring, Summer	<1982	May	June					Secondary	Davis et al. 1998	F 32
White Hake	Scotian Shelf	Summer (late), Fall	<1982	August	September					Secondary	Fahay and Able 1989	F 38
Windowpane	Scotian Shelf	Summer, Fall	1977-1982	July	October					Primary	Stewart et al. 2003	F183
Winter Flounder	Scotian Shelf	Summer	1980-1982	July	July					Primary	Stewart et al. 2003	F183
Winter Flounder	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	April	June					Primary	Stewart et al. 2003	F183
Witch Flounder	Scotian Shelf	Summer, Fall	1976-1982	June	October					Primary	Stewart et al. 2003	F183
Witch Flounder	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Summer	1983-1985	June	June					Primary	Stewart et al. 2003	F183
Wrasses	Scotian Shelf	Fall	1977-1977	October	October					Primary	Stewart et al. 2003	F183
Wrymouth	Scotian Shelf (western)	Spring	1953-1971	April	May					Secondary	Colton and St. Onge 1974.	F189
Wrymouth	Scotian Shelf	Spring	1981-1981	April	April					Primary	Stewart et al. 2003	F183
Wrymouth	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring	1983-1985	March	April					Primary	Stewart et al. 2003	F183
Yellowtail Flounder	Scotian Shelf	Spring, Summer, Fall	1976-1982	May	September					Primary	Stewart et al. 2003	F183
Yellowtail Flounder	Western Scotian Shelf, Southwest Nova Scotia Shelf, Browns Bank, Georges Bank	Spring, Summer	1983-1985	May	June					Primary	Stewart et al. 2003	F183

APPENDIX G — CATALOGUE OF MAPS OF MONTHLY DISTRIBUTIONS OF FISH EGGS, LARVAE, JUVENILES AND ADULTS FOR THE SCOTIAN SHELF FROM ANALYSIS OF DATASETS FROM SCOTIAN SHELF ICHTHYOPLANKTON PROGRAM (SSIP) (1976-1982) AND FISHERIES ECOLOGY PROGRAM (1983-1985).

Appendix G - Catalogue of maps of monthly distributions of fish eggs, larvae, juveniles and adults for the Scotian Shelf from analysis of datasets from Scotian Shelf Ichthyoplankton Program (SSIP) (1976-1982) and Fisheries Ecology Program (1983-1985).

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Alligatorfish	Larvae	April	F183-0340R-2-4-2-2-3-3.png	Contour Percentile	F.E.P Alligatorfish, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Alligatorfish	Larvae	April	F183-0340R-2-4-2-4-3-3.png	Contour Percentile	F.E.P Alligatorfish, Larvae April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Alligatorfish	Larvae	May	F183-0340R-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Alligatorfish, Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Alligatorfish	Larvae	May	F183-0340R-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Alligatorfish, Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Alligatorfish	Larvae	May	F183-0340R-2-5-2-2-3-3.png	Contour Percentile	F.E.P Alligatorfish, Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Alligatorfish	Larvae	May	F183-0340R-2-5-2-4-3-3.png	Contour Percentile	F.E.P Alligatorfish, Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Alligatorfish	Larvae	June	F183-0340R-2-6-2-2-3-3.png	Contour Percentile	F.E.P Alligatorfish, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American Angler, Monkfish, Goosefish	Larvae	October	F183-177-2-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Monkfish,Goosefish,Angler, Larvae Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
American Angler, Monkfish, Goosefish	Larvae	October	F183-177-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Monkfish,Goosefish,Angler, Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
American Angler, Monkfish, Goosefish	Larvae	October	F183-177-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Monkfish,Goosefish,Angler, Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
American Angler, Monkfish, Goosefish	Larvae	July	F183-177-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Monkfish,Goosefish,Angler, Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
American Angler, Monkfish, Goosefish	Larvae	July	F183-177-2-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Monkfish,Goosefish,Angler, Larvae July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
American Angler, Monkfish, Goosefish	Larvae	August	F183-177-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Monkfish,Goosefish,Angler, Larvae August 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
American Angler, Monkfish, Goosefish	Larvae	August	F183-177-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Monkfish,Goosefish,Angler, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
American Angler, Monkfish, Goosefish	Larvae	August	F183-177-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Monkfish,Goosefish,Angler, Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
American Angler, Monkfish, Goosefish	Larvae	August	F183-177-2-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Monkfish,Goosefish,Angler, Larvae August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
American Angler, Monkfish, Goosefish	Larvae	September	F183-177-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Monkfish,Goosefish,Angler, Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
American Angler, Monkfish, Goosefish	Larvae	September	F183-177-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Monkfish,Goosefish,Angler, Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
American Angler/ Monkfish	Egg	June	F183-1238R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Angler/Monkfish Eggs, June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
American Eel	Juvenile	March	F183-0600R-3-3-1-1-3-3.png	Contour Percentile	S.S.I.P. American Eel, Juvenile March 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
American Eel	Juvenile	March	F183-0600R-3-3-1-3-3-3.png	Contour Percentile	S.S.I.P. American Eel, Juvenile March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
American Plaice	Larvae	April	F183-140-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. American Plaice, Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
American Plaice	Larvae	April	F183-140-2-4-1-4-3-3.png	Contour Percentile	S.S.I.P. American Plaice, Larvae April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
American Plaice	Larvae	April	F183-140-2-4-2-2-3-3.png	Contour Percentile	F.E.P American Plaice, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American Plaice	Larvae	April	F183-140-2-4-2-4-3-3.png	Contour Percentile	F.E.P American Plaice, Larvae April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American Plaice	Larvae	May	F183-140-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. American Plaice, Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
American Plaice	Larvae	May	F183-140-2-5-1-3-3-3.png	Contour Percentile	S.S.I.P. American Plaice, Larvae May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
American Plaice	Larvae	May	F183-140-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. American Plaice, Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
American Plaice	Larvae	May	F183-140-2-5-2-2-3-3.png	Contour Percentile	F.E.P American Plaice, Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American Plaice	Larvae	May	F183-140-2-5-2-4-3-3.png	Contour Percentile	F.E.P American Plaice, Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American Plaice	Larvae	June	F183-140-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. American Plaice, Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
American Plaice	Larvae	June	F183-140-2-6-1-4-3-3.png	Contour Percentile	S.S.I.P. American Plaice, Larvae June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
American Plaice	Larvae	June	F183-140-2-6-2-2-3-3.png	Contour Percentile	F.E.P American Plaice, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American Plaice	Larvae	June	F183-140-2-6-2-4-3-3.png	Contour Percentile	F.E.P American Plaice, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American Plaice	Larvae	July	F183-140-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. American Plaice, Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
American Plaice	Larvae	July	F183-140-2-7-1-4-3-3.png	Contour Percentile	S.S.I.P. American Plaice, Larvae July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
American Plaice	Larvae	August	F183-140-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. American Plaice, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
American Plaice	Larvae	August	F183-140-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. American Plaice, Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
American Plaice	Juvenile	August	F183-140-3-8-1-2-3-3.png	Contour Percentile	S.S.I.P. American Plaice, Juvenile August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
American Plaice	Juvenile	August	F183-140-3-8-1-3-3-3.png	Contour Percentile	S.S.I.P. American Plaice, Juvenile August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
American plaice Eggs	Egg	February	F183-1222R-1-2-1-1-3-3.png	Contour Percentile	S.S.I.P. Plaice Eggs, Feb 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
American plaice Eggs	Egg	February	F183-1222R-1-2-1-3-3-3.png	Contour Percentile	S.S.I.P. Plaice Eggs, Feb 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
American plaice Eggs	Egg	February	F183-1222R-1-2-2-2-3-3.png	Contour Percentile	F.E.P Plaice Eggs, Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American plaice Eggs	Egg	February	F183-1222R-1-2-2-4-3-3.png	Contour Percentile	F.E.P Plaice Eggs, Feb 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American plaice Eggs	Egg	March	F183-1222R-1-3-1-1-3-3.png	Contour Percentile	S.S.I.P. Plaice Eggs, March 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
American plaice Eggs	Egg	March	F183-1222R-1-3-1-2-3-3.png	Contour Percentile	S.S.I.P. Plaice Eggs, March 1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
American plaice Eggs	Egg	March	F183-1222R-1-3-1-3-3-3.png	Contour Percentile	S.S.I.P. Plaice Eggs, March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
American plaice Eggs	Egg	March	F183-1222R-1-3-1-4-3-3.png	Contour Percentile	S.S.I.P. Plaice Eggs, March 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
American plaice Eggs	Egg	March	F183-1222R-1-3-2-2-3-3.png	Contour Percentile	F.E.P Plaice Eggs, March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American plaice Eggs	Egg	March	F183-1222R-1-3-2-4-3-3.png	Contour Percentile	F.E.P Plaice Eggs, March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American plaice Eggs	Egg	April	F183-1222R-1-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Plaice Eggs, April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
American plaice Eggs	Egg	April	F183-1222R-1-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Plaice Eggs, April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
American plaice Eggs	Egg	April	F183-1222R-1-4-2-2-3-3.png	Contour Percentile	F.E.P Plaice Eggs, April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American plaice Eggs	Egg	April	F183-1222R-1-4-2-4-3-3.png	Contour Percentile	F.E.P Plaice Eggs, April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American plaice Eggs	Egg	May	F183-1222R-1-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Plaice Eggs, May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
American plaice Eggs	Egg	May	F183-1222R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Plaice Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
American plaice Eggs	Egg	May	F183-1222R-1-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Plaice Eggs, May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
American plaice Eggs	Egg	May	F183-1222R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Plaice Eggs, May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
American plaice Eggs	Egg	May	F183-1222R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Plaice Eggs, May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American plaice Eggs	Egg	May	F183-1222R-1-5-2-4-3-3.png	Contour Percentile	F.E.P Plaice Eggs, May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
American plaice Eggs	Egg	June	F183-1222R-1-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Plaice Eggs, June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
American plaice Eggs	Egg	June	F183-1222R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Plaice Eggs, June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
American plaice Eggs	Egg	June	F183-1222R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Plaice Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
American plaice Eggs	Egg	June	F183-1222R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Plaice Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Anglemouth	Larvae	September	F183-0755R-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Anglemouth (Ns), Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Anglemouth	Larvae	September	F183-0755R-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Anglemouth (Ns), Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Arctic Shanny	Larvae	May	F183-0624R-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Arctic Shanny, Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Arctic Shanny	Larvae	May	F183-0624R-2-5-2-4-3-3.png	Contour Percentile	F.E.P Arctic Shanny, Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Arctic Shanny	Larvae	June	F183-0624R-2-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Arctic Shanny, Larvae June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Arctic Shanny	Juvenile	July	F183-0624R-3-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Arctic Shanny, Juvenile July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod	Larvae	October	F183-100-2-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod	Larvae	October	F183-100-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod	Larvae	November	F183-100-2-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod	Larvae	November	F183-100-2-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod	Larvae	January	F183-100-2-1-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod	Larvae	January	F183-100-2-1-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae Jan 1981-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod	Larvae	December	F183-100-2-12-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae Dec 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod	Larvae	December	F183-100-2-12-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae Dec 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod	Larvae	February	F183-100-2-2-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae Feb 1979-1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod	Larvae	February	F183-100-2-2-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae Feb 1980-1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod	Larvae	February	F183-100-2-2-2-2-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Larvae Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod	Larvae	February	F183-100-2-2-2-4-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Larvae Feb 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod	Larvae	March	F183-100-2-3-2-2-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Larvae March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod	Larvae	March	F183-100-2-3-2-4-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Larvae March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Atlantic Cod	Larvae	April	F183-100-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod	Larvae	April	F183-100-2-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod	Larvae	April	F183-100-2-4-2-2-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod	Larvae	April	F183-100-2-4-2-4-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Larvae April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod	Larvae	May	F183-100-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod	Larvae	May	F183-100-2-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic Cod	Larvae	May	F183-100-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod	Larvae	May	F183-100-2-5-2-2-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod	Larvae	May	F183-100-2-5-2-4-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod	Larvae	June	F183-100-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod	Larvae	June	F183-100-2-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod	Larvae	June	F183-100-2-6-2-2-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod	Larvae	June	F183-100-2-6-2-4-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod	Larvae	July	F183-100-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod	Larvae	August	F183-100-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod	Larvae	September	F183-100-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod	Juvenile	February	F183-100-3-2-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod (Atlantic), Juvenile Feb 1979-1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod	Juvenile	February	F183-100-3-2-2-2-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Juvenile Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod	Juvenile	March	F183-100-3-3-2-2-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Juvenile March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod	Juvenile	April	F183-100-3-4-2-2-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Juvenile April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod	Juvenile	May	F183-100-3-5-2-2-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Juvenile May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Atlantic Cod	Juvenile	May	F183-100-3-5-2-4-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Juvenile May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod	Juvenile	June	F183-100-3-6-2-2-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Juvenile June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod	Juvenile	June	F183-100-3-6-2-4-3-3.png	Contour Percentile	F.E.P Cod (Atlantic), Juvenile June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic cod Eggs	Egg	October	F183-1211R-1-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	October	F183-1211R-1-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	November	F183-1211R-1-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	January	F183-1211R-1-1-1-1-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, Jan 1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	November	F183-1211R-1-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	January	F183-1211R-1-1-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	January	F183-1211R-1-1-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, Jan 1981-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	December	F183-1211R-1-12-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, Dec 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	December	F183-1211R-1-12-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, Dec 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	February	F183-1211R-1-2-1-1-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, Feb 1977,1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	February	F183-1211R-1-2-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, Feb 1979-1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	February	F183-1211R-1-2-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, Feb 1980-1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	February	F183-1211R-1-2-2-2-3-3.png	Contour Percentile	F.E.P Cod Eggs, Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic cod Eggs	Egg	February	F183-1211R-1-2-2-4-3-3.png	Contour Percentile	F.E.P Cod Eggs, Feb 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic cod Eggs	Egg	March	F183-1211R-1-3-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, March 1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	March	F183-1211R-1-3-1-3-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	March	F183-1211R-1-3-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, March 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	March	F183-1211R-1-3-2-2-3-3.png	Contour Percentile	F.E.P Cod Eggs, March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic cod Eggs	Egg	March	F183-1211R-1-3-2-4-3-3.png	Contour Percentile	F.E.P Cod Eggs, March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic cod Eggs	Egg	April	F183-1211R-1-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Atlantic cod Eggs	Egg	April	F183-1211R-1-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	April	F183-1211R-1-4-2-2-3-3.png	Contour Percentile	F.E.P Cod Eggs, April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic cod Eggs	Egg	April	F183-1211R-1-4-2-4-3-3.png	Contour Percentile	F.E.P Cod Eggs, April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic cod Eggs	Egg	May	F183-1211R-1-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	May	F183-1211R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	May	F183-1211R-1-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	May	F183-1211R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	May	F183-1211R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Cod Eggs, May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic cod Eggs	Egg	May	F183-1211R-1-5-2-4-3-3.png	Contour Percentile	F.E.P Cod Eggs, May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic cod Eggs	Egg	June	F183-1211R-1-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	June	F183-1211R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic cod Eggs	Egg	June	F183-1211R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Cod Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic cod Eggs	Egg	June	F183-1211R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Cod Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic cod Eggs	Egg	August	F183-1211R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic cod/ Haddock Eggs	Egg	November	F183-1237R-1-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock Eggs, Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic cod/ Haddock Eggs	Egg	January	F183-1237R-1-1-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock Eggs, Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic cod/ Haddock Eggs	Egg	December	F183-1237R-1-12-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock Eggs, Dec 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic cod/ Haddock Eggs	Egg	February	F183-1237R-1-2-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock Eggs, Feb 1979-1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	October	F183-1242R-1-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	October	F183-1242R-1-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	October	F183-1242R-1-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	November	F183-1242R-1-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Atlantic Cod/ Haddock/ Witch Flounder	Egg	January	F183-1242R-1-1-1-1-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Jan 1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	November	F183-1242R-1-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	January	F183-1242R-1-1-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	January	F183-1242R-1-1-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Jan 1981-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	December	F183-1242R-1-12-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Dec 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	December	F183-1242R-1-12-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Dec 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	February	F183-1242R-1-2-1-1-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Feb 1977,1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	February	F183-1242R-1-2-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Feb 1979-1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	February	F183-1242R-1-2-1-3-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Feb 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	February	F183-1242R-1-2-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Feb 1980-1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	February	F183-1242R-1-2-2-2-3-3.png	Contour Percentile	F.E.P Cod/Haddock/Witch Eggs, Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	February	F183-1242R-1-2-2-4-3-3.png	Contour Percentile	F.E.P Cod/Haddock/Witch Eggs, Feb 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	March	F183-1242R-1-3-1-1-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, March 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	March	F183-1242R-1-3-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, March 1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	March	F183-1242R-1-3-1-3-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	March	F183-1242R-1-3-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, March 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	March	F183-1242R-1-3-2-2-3-3.png	Contour Percentile	F.E.P Cod/Haddock/Witch Eggs, March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	March	F183-1242R-1-3-2-4-3-3.png	Contour Percentile	F.E.P Cod/Haddock/Witch Eggs, March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	April	F183-1242R-1-4-1-1-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, April 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	April	F183-1242R-1-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	April	F183-1242R-1-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Atlantic Cod/ Haddock/ Witch Flounder	Egg	April	F183-1242R-1-4-2-2-3-3.png	Contour Percentile	F.E.P Cod/Haddock/Witch Eggs, April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	April	F183-1242R-1-4-2-4-3-3.png	Contour Percentile	F.E.P Cod/Haddock/Witch Eggs, April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	May	F183-1242R-1-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	May	F183-1242R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	May	F183-1242R-1-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	May	F183-1242R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	May	F183-1242R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Cod/Haddock/Witch Eggs, May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	May	F183-1242R-1-5-2-4-3-3.png	Contour Percentile	F.E.P Cod/Haddock/Witch Eggs, May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	June	F183-1242R-1-6-1-1-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, June 1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	June	F183-1242R-1-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	June	F183-1242R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	June	F183-1242R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Cod/Haddock/Witch Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	June	F183-1242R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Cod/Haddock/Witch Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	July	F183-1242R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	July	F183-1242R-1-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	August	F183-1242R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	August	F183-1242R-1-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	August	F183-1242R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	September	F183-1242R-1-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	September	F183-1242R-1-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic Cod/ Haddock/ Witch Flounder	Egg	September	F183-1242R-1-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Cod/Haddock/Witch Eggs, Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Atlantic Herring	Larvae	October	F183-200-2-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Herring	Larvae	October	F183-200-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic Herring	Larvae	October	F183-200-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Herring	Larvae	November	F183-200-2-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Herring	Larvae	November	F183-200-2-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Herring	Larvae	January	F183-200-2-1-1-2-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Herring	Larvae	January	F183-200-2-1-1-4-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae Jan 1981-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Herring	Larvae	December	F183-200-2-12-1-2-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae Dec 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Herring	Larvae	December	F183-200-2-12-1-4-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae Dec 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Herring	Larvae	February	F183-200-2-2-1-1-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae Feb 1977,1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic Herring	Larvae	February	F183-200-2-2-1-2-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae Feb 1979-1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Herring	Larvae	February	F183-200-2-2-1-3-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae Feb 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic Herring	Larvae	February	F183-200-2-2-1-4-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae Feb 1980-1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Herring	Larvae	February	F183-200-2-2-2-2-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Larvae Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Larvae	February	F183-200-2-2-2-4-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Larvae Feb 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Larvae	March	F183-200-2-3-1-1-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae March 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic Herring	Larvae	March	F183-200-2-3-1-3-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic Herring	Larvae	March	F183-200-2-3-2-2-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Larvae March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Larvae	March	F183-200-2-3-2-4-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Larvae March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Larvae	April	F183-200-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Herring	Larvae	April	F183-200-2-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Atlantic Herring	Larvae	April	F183-200-2-4-2-2-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Larvae	April	F183-200-2-4-2-4-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Larvae April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Larvae	May	F183-200-2-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic Herring	Larvae	May	F183-200-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Herring	Larvae	May	F183-200-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Herring	Larvae	May	F183-200-2-5-2-2-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Larvae	May	F183-200-2-5-2-4-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Larvae	June	F183-200-2-6-2-4-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Juvenile	February	F183-200-3-2-2-2-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Juvenile Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Juvenile	February	F183-200-3-2-2-4-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Juvenile Feb 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Juvenile	March	F183-200-3-3-2-2-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Juvenile March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Juvenile	April	F183-200-3-4-2-2-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Juvenile April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Juvenile	April	F183-200-3-4-2-4-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Juvenile April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Juvenile	May	F183-200-3-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Juvenile May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic Herring	Juvenile	May	F183-200-3-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Herring (Atlantic), Juvenile May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Herring	Juvenile	May	F183-200-3-5-2-2-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Juvenile May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring	Juvenile	May	F183-200-3-5-2-4-3-3.png	Contour Percentile	F.E.P Herring (Atlantic), Juvenile May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Herring/ Capelin-like	Larvae	November	F183-0290R-2-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Herring/Capelin Like, Larvae Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Mackerel	Larvae	June	F183-250-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Mackerel (Atlantic), Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Mackerel	Larvae	June	F183-250-2-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Mackerel (Atlantic), Larvae June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Mackerel	Larvae	July	F183-250-2-7-1-1-3-3.png	Contour Percentile	S.S.I.P. Mackerel (Atlantic), Larvae July 1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Atlantic Mackerel	Larvae	July	F183-250-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Mackerel (Atlantic), Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Mackerel	Larvae	July	F183-250-2-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Mackerel (Atlantic), Larvae July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Mackerel	Larvae	August	F183-250-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Mackerel (Atlantic), Larvae August 1976-1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic Mackerel	Larvae	August	F183-250-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Mackerel (Atlantic), Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Mackerel	Larvae	August	F183-250-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Mackerel (Atlantic), Larvae August 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic Mackerel	Larvae	August	F183-250-2-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Mackerel (Atlantic), Larvae August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Mackerel	Juvenile	July	F183-250-3-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Mackerel (Atlantic), Juvenile July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic Mackerel	Juvenile	July	F183-250-3-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Mackerel (Atlantic), Juvenile July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Mackerel	Juvenile	August	F183-250-3-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Mackerel (Atlantic), Juvenile August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic mackerel Eggs	Egg	May	F183-1223R-1-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Mackerel Eggs, May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic mackerel Eggs	Egg	May	F183-1223R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Mackerel Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic mackerel Eggs	Egg	May	F183-1223R-1-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Mackerel Eggs, May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic mackerel Eggs	Egg	May	F183-1223R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Mackerel Eggs, May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic mackerel Eggs	Egg	May	F183-1223R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Mackerel Eggs, May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic mackerel Eggs	Egg	May	F183-1223R-1-5-2-4-3-3.png	Contour Percentile	F.E.P Mackerel Eggs, May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic mackerel Eggs	Egg	June	F183-1223R-1-6-1-1-3-3.png	Contour Percentile	S.S.I.P. Mackerel Eggs, June 1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic mackerel Eggs	Egg	June	F183-1223R-1-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Mackerel Eggs, June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic mackerel Eggs	Egg	June	F183-1223R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Mackerel Eggs, June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic mackerel Eggs	Egg	June	F183-1223R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Mackerel Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic mackerel Eggs	Egg	June	F183-1223R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Mackerel Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic mackerel Eggs	Egg	July	F183-1223R-1-7-1-1-3-3.png	Contour Percentile	S.S.I.P. Mackerel Eggs, July 1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic mackerel Eggs	Egg	July	F183-1223R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Mackerel Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Atlantic mackerel Eggs	Egg	July	F183-1223R-1-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Mackerel Eggs, July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic mackerel Eggs	Egg	August	F183-1223R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Mackerel Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Atlantic mackerel Eggs	Egg	August	F183-1223R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Mackerel Eggs, August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Saury, Needlefish	Adult	August	F183-0720R-4-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Atlantic Saury,Needlefish, Adult August 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic Seasnail	Larvae	June	F183-0503R-2-6-2-2-3-3.png	Contour Percentile	F.E.P Atlantic Seasnail, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Seasnail	Larvae	June	F183-0503R-2-6-2-4-3-3.png	Contour Percentile	F.E.P Atlantic Seasnail, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Wolffish	Larvae	February	F183-0050R-2-2-1-4-3-3.png	Contour Percentile	S.S.I.P. Striped Atlantic Wolffish, Larvae Feb 1980-1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Wolffish	Larvae	February	F183-0050R-2-2-2-2-3-3.png	Contour Percentile	F.E.P Striped Atlantic Wolffish, Larvae Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Wolffish	Larvae	February	F183-0050R-2-2-2-4-3-3.png	Contour Percentile	F.E.P Striped Atlantic Wolffish, Larvae Feb 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Wolffish	Larvae	March	F183-0050R-2-3-1-1-3-3.png	Contour Percentile	S.S.I.P. Striped Atlantic Wolffish, Larvae March 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Atlantic Wolffish	Larvae	March	F183-0050R-2-3-2-2-3-3.png	Contour Percentile	F.E.P Striped Atlantic Wolffish, Larvae March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Wolffish	Larvae	March	F183-0050R-2-3-2-4-3-3.png	Contour Percentile	F.E.P Striped Atlantic Wolffish, Larvae March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Wolffish	Larvae	April	F183-0050R-2-4-2-2-3-3.png	Contour Percentile	F.E.P Striped Atlantic Wolffish, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Wolffish	Larvae	April	F183-0050R-2-4-2-4-3-3.png	Contour Percentile	F.E.P Striped Atlantic Wolffish, Larvae April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Wolffish	Larvae	May	F183-0050R-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Striped Atlantic Wolffish, Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Atlantic Wolffish	Juvenile	March	F183-0050R-3-3-1-3-3-3.png	Contour Percentile	S.S.I.P. Striped Atlantic Wolffish, Juvenile March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Atlantic Wolffish	Juvenile	March	F183-0050R-3-3-2-4-3-3.png	Contour Percentile	F.E.P Striped Atlantic Wolffish, Juvenile March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Wolffish	Juvenile	April	F183-0050R-3-4-2-2-3-3.png	Contour Percentile	F.E.P Striped Atlantic Wolffish, Juvenile April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Wolffish	Juvenile	April	F183-0050R-3-4-2-4-3-3.png	Contour Percentile	F.E.P Striped Atlantic Wolffish, Juvenile April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Atlantic Wolffish	Juvenile	May	F183-0050R-3-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Striped Atlantic Wolffish, Juvenile May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Barracudinas	Larvae	March	F183-0713R-2-3-1-3-3-3.png	Contour Percentile	S.S.I.P. Barracudina,Unidentified, Larvae March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Brauers Anglemouth	Juvenile	August	F183-0754R-3-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Brauers Anglemouth, Juvenile August 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Brill- Windowpane	Egg	May	F183-1249R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Brill-Windowpane Eggs, May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Brill- Windowpane	Egg	June	F183-1249R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Brill-Windowpane Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Brill- Windowpane	Egg	June	F183-1249R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Brill-Windowpane Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Brill- Windowpane	Egg	July	F183-1249R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Brill-Windowpane Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Brill- Windowpane	Egg	July	F183-1249R-1-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Brill-Windowpane Eggs, July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Brill- Windowpane	Egg	August	F183-1249R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Brill-Windowpane Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Brill- Windowpane	Egg	August	F183-1249R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Brill-Windowpane Eggs, August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Brill- Windowpane	Egg	September	F183-1249R-1-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Brill-Windowpane Eggs, Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Brill- Windowpane Flounder Eggs	Egg	May	F183-1249R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Brill-Windowpane Eggs, May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Brill- Windowpane Flounder Eggs	Egg	June	F183-1249R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Brill-Windowpane Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Brill- Windowpane Flounder Eggs	Egg	June	F183-1249R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Brill-Windowpane Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Brill- Windowpane Flounder Eggs	Egg	July	F183-1249R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Brill-Windowpane Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Brill- Windowpane Flounder Eggs	Egg	August	F183-1249R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Brill-Windowpane Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Brill- Windowpane Flounder Eggs	Egg	August	F183-1249R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Brill-Windowpane Eggs, August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Brill- Windowpane Flounder Eggs	Egg	September	F183-1249R-1-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Brill-Windowpane Eggs, Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Brill- Windowpane Flounder Eggs	Egg	September	F183-1249R-1-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Brill-Windowpane Eggs, Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Butterfish	Larvae	September	F183-391-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Butterfish, Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Butterfish	Juvenile	May	F183-391-3-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Butterfish, Juvenile May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Capelin	Larvae	February	F183-360-2-2-1-3-3-3.png	Contour Percentile	S.S.I.P. Capelin, Larvae Feb 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Capelin	Larvae	August	F183-360-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Capelin, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Capelin	Larvae	August	F183-360-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Capelin, Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Capelin	Juvenile	February	F183-360-3-2-1-3-3-3.png	Contour Percentile	S.S.I.P. Capelin, Juvenile Feb 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Capelin	Juvenile	March	F183-360-3-3-1-1-3-3.png	Contour Percentile	S.S.I.P. Capelin, Juvenile March 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Capelin	Juvenile	May	F183-360-3-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Capelin, Juvenile May 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Cunner	Larvae	October	F183-121-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Cunner, Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cunner	Larvae	July	F183-121-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Cunner, Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cunner	Larvae	July	F183-121-2-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Cunner, Larvae July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cunner	Larvae	August	F183-121-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Cunner, Larvae August 1976-1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Cunner	Larvae	August	F183-121-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Cunner, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cunner	Larvae	August	F183-121-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Cunner, Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Cunner	Larvae	August	F183-121-2-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Cunner, Larvae August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cunner	Larvae	September	F183-121-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Cunner, Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cunner	Larvae	September	F183-121-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Cunner, Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cunner Eggs	Egg	April	F183-1232R-1-4-2-2-3-3.png	Contour Percentile	F.E.P Cunner Eggs, April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cunner Eggs	Egg	May	F183-1232R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Cunner Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cunner Eggs	Egg	July	F183-1232R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Cunner Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cunner Eggs	Egg	July	F183-1232R-1-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Cunner Eggs, July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cunner Eggs	Egg	August	F183-1232R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Cunner Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cunner Eggs	Egg	August	F183-1232R-1-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Cunner Eggs, August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Cunner Eggs	Egg	August	F183-1232R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Cunner Eggs, August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	February	F183-1244R-1-2-2-2-3-3.png	Contour Percentile	F.E.P Cunner/Yellowtail Eggs, Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cunner/ Yellowtail Flounder Eggs	Egg	March	F183-1244R-1-3-1-1-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, March 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	March	F183-1244R-1-3-2-2-3-3.png	Contour Percentile	F.E.P Cunner/Yellowtail Eggs, March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Cunner/ Yellowtail Flounder Eggs	Egg	March	F183-1244R-1-3-2-4-3-3.png	Contour Percentile	F.E.P Cunner/Yellowtail Eggs, March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cunner/ Yellowtail Flounder Eggs	Egg	April	F183-1244R-1-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	April	F183-1244R-1-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	April	F183-1244R-1-4-2-2-3-3.png	Contour Percentile	F.E.P Cunner/Yellowtail Eggs, April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cunner/ Yellowtail Flounder Eggs	Egg	April	F183-1244R-1-4-2-4-3-3.png	Contour Percentile	F.E.P Cunner/Yellowtail Eggs, April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cunner/ Yellowtail Flounder Eggs	Egg	May	F183-1244R-1-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	May	F183-1244R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	May	F183-1244R-1-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	May	F183-1244R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	May	F183-1244R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Cunner/Yellowtail Eggs, May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cunner/ Yellowtail Flounder Eggs	Egg	May	F183-1244R-1-5-2-4-3-3.png	Contour Percentile	F.E.P Cunner/Yellowtail Eggs, May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cunner/ Yellowtail Flounder Eggs	Egg	June	F183-1244R-1-6-1-1-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, June 1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	June	F183-1244R-1-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	June	F183-1244R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	June	F183-1244R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Cunner/Yellowtail Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cunner/ Yellowtail Flounder Eggs	Egg	June	F183-1244R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Cunner/Yellowtail Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cunner/ Yellowtail Flounder Eggs	Egg	July	F183-1244R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	July	F183-1244R-1-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	August	F183-1244R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	August	F183-1244R-1-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Cunner/ Yellowtail Flounder Eggs	Egg	August	F183-1244R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Cunner/ Yellowtail Flounder Eggs	Egg	September	F183-1244R-1-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Cunner/Yellowtail Eggs, Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cusk	Larvae	May	F183-173-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Cusk, Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cusk	Larvae	June	F183-173-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Cusk, Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cusk	Larvae	June	F183-173-2-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Cusk, Larvae June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cusk	Larvae	June	F183-173-2-6-2-2-3-3.png	Contour Percentile	F.E.P Cusk, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cusk	Larvae	June	F183-173-2-6-2-4-3-3.png	Contour Percentile	F.E.P Cusk, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cusk Eel	Larvae	October	F183-0649R-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Cusk-Eels, Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Cusk Eggs	Egg	October	F183-1235R-1-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Cusk Eggs, Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Cusk Eggs	Egg	April	F183-1235R-1-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Cusk Eggs, April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cusk Eggs	Egg	April	F183-1235R-1-4-2-2-3-3.png	Contour Percentile	F.E.P Cusk Eggs, April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cusk Eggs	Egg	April	F183-1235R-1-4-2-4-3-3.png	Contour Percentile	F.E.P Cusk Eggs, April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cusk Eggs	Egg	May	F183-1235R-1-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Cusk Eggs, May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Cusk Eggs	Egg	May	F183-1235R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Cusk Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cusk Eggs	Egg	May	F183-1235R-1-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Cusk Eggs, May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Cusk Eggs	Egg	May	F183-1235R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Cusk Eggs, May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cusk Eggs	Egg	May	F183-1235R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Cusk Eggs, May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cusk Eggs	Egg	May	F183-1235R-1-5-2-4-3-3.png	Contour Percentile	F.E.P Cusk Eggs, May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cusk Eggs	Egg	June	F183-1235R-1-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Cusk Eggs, June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cusk Eggs	Egg	June	F183-1235R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Cusk Eggs, June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cusk Eggs	Egg	June	F183-1235R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Cusk Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cusk Eggs	Egg	June	F183-1235R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Cusk Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Cusk Eggs	Egg	July	F183-1235R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Cusk Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Cusk Eggs	Egg	July	F183-1235R-1-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Cusk Eggs, July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cusk Eggs	Egg	August	F183-1235R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Cusk Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cusk Eggs	Egg	August	F183-1235R-1-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Cusk Eggs, August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Cusk Eggs	Egg	August	F183-1235R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Cusk Eggs, August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cusk Eggs	Egg	September	F183-1235R-1-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Cusk Eggs, Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cusk/ Atlantic mackerel Eggs	Egg	May	F183-1243R-1-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Cusk/Mackerel Eggs, May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Cusk/ Atlantic mackerel Eggs	Egg	May	F183-1243R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Cusk/Mackerel Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cusk/ Atlantic mackerel Eggs	Egg	May	F183-1243R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Cusk/Mackerel Eggs, May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Cusk/ Atlantic mackerel Eggs	Egg	June	F183-1243R-1-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Cusk/Mackerel Eggs, June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cusk/ Atlantic mackerel Eggs	Egg	July	F183-1243R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Cusk/Mackerel Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cusk/ Atlantic mackerel Eggs	Egg	August	F183-1243R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Cusk/Mackerel Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Cusk/ Atlantic mackerel Eggs	Egg	September	F183-1243R-1-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Cusk/Mackerel Eggs, Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	October	F183-1200R-1-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	October	F183-1200R-1-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fish Eggs	Egg	November	F183-1200R-1-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	January	F183-1200R-1-1-1-1-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Jan 1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Fish Eggs	Egg	November	F183-1200R-1-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fish Eggs	Egg	January	F183-1200R-1-1-1-2-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	January	F183-1200R-1-1-1-4-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Jan 1981-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fish Eggs	Egg	December	F183-1200R-1-12-1-2-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Dec 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	December	F183-1200R-1-12-1-4-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Dec 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Fish Eggs	Egg	February	F183-1200R-1-2-1-1-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Feb 1977,1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Fish Eggs	Egg	February	F183-1200R-1-2-1-2-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Feb 1979-1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	February	F183-1200R-1-2-1-3-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Feb 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	February	F183-1200R-1-2-1-4-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Feb 1980-1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fish Eggs	Egg	February	F183-1200R-1-2-2-2-3-3.png	Contour Percentile	F.E.P Fish Eggs-Unidentified, Eggs Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Fish Eggs	Egg	February	F183-1200R-1-2-2-4-3-3.png	Contour Percentile	F.E.P Fish Eggs-Unidentified, Eggs Feb 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Fish Eggs	Egg	March	F183-1200R-1-3-1-1-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs March 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Fish Eggs	Egg	March	F183-1200R-1-3-1-3-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	March	F183-1200R-1-3-1-4-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs March 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fish Eggs	Egg	March	F183-1200R-1-3-2-2-3-3.png	Contour Percentile	F.E.P Fish Eggs-Unidentified, Eggs March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Fish Eggs	Egg	March	F183-1200R-1-3-2-4-3-3.png	Contour Percentile	F.E.P Fish Eggs-Unidentified, Eggs March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Fish Eggs	Egg	April	F183-1200R-1-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	April	F183-1200R-1-4-2-2-3-3.png	Contour Percentile	F.E.P Fish Eggs-Unidentified, Eggs April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Fish Eggs	Egg	April	F183-1200R-1-4-2-4-3-3.png	Contour Percentile	F.E.P Fish Eggs-Unidentified, Eggs April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Fish Eggs	Egg	May	F183-1200R-1-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Fish Eggs	Egg	May	F183-1200R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	May	F183-1200R-1-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	May	F183-1200R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fish Eggs	Egg	May	F183-1200R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Fish Eggs-Unidentified, Eggs May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Fish Eggs	Egg	May	F183-1200R-1-5-2-4-3-3.png	Contour Percentile	F.E.P Fish Eggs-Unidentified, Eggs May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Fish Eggs	Egg	June	F183-1200R-1-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Fish Eggs	Egg	June	F183-1200R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Fish Eggs-Unidentified, Eggs June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Fish Eggs	Egg	June	F183-1200R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Fish Eggs-Unidentified, Eggs June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Fish Eggs	Egg	July	F183-1200R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	July	F183-1200R-1-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fish Eggs	Egg	August	F183-1200R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	August	F183-1200R-1-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	August	F183-1200R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fish Eggs	Egg	September	F183-1200R-1-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	September	F183-1200R-1-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Fish Eggs	Egg	September	F183-1200R-1-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Fish Eggs-Unidentified, Eggs Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Flounder	Larvae	October	F183-0008R-2-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Bothus Sp., Larvae Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Flounder	Larvae	October	F183-0008R-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Bothus Sp., Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Flounder	Larvae	October	F183-0008R-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Bothus Sp., Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Flounder	Larvae	August	F183-0008R-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Bothus Sp., Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Flounder	Larvae	September	F183-0008R-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Bothus Sp., Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Flounder	Larvae	September	F183-0008R-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Bothus Sp., Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Flounder Unidentified	Larvae	June	F183-149-2-6-2-4-3-3.png	Contour Percentile	F.E.P Flounder Unidentified, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Flounder Unidentified	Larvae	August	F183-149-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Flounder Unidentified, Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	October	F183-0114R-2-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	October	F183-0114R-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	October	F183-0114R-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Fourbeard Rockling	Larvae	November	F183-0114R-2-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	November	F183-0114R-2-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	June	F183-0114R-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	June	F183-0114R-2-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	June	F183-0114R-2-6-2-4-3-3.png	Contour Percentile	F.E.P Fourbeard Rockling, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Fourbeard Rockling	Larvae	July	F183-0114R-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	July	F183-0114R-2-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	August	F183-0114R-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae August 1976-1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	August	F183-0114R-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	August	F183-0114R-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	August	F183-0114R-2-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	September	F183-0114R-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	September	F183-0114R-2-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Fourbeard Rockling	Larvae	September	F183-0114R-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling	Juvenile	October	F183-0114R-3-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Juvenile Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling	Juvenile	November	F183-0114R-3-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Juvenile Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling	Juvenile	July	F183-0114R-3-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Juvenile July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling	Juvenile	August	F183-0114R-3-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Juvenile August 1976-1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling	Juvenile	August	F183-0114R-3-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Juvenile August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling	Juvenile	September	F183-0114R-3-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Fourbeard Rockling, Juvenile Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling Eggs	Egg	October	F183-1229R-1-10-1-4-3-3.png	Contour Percentile	S.S.I.P. F.B. Rockling Eggs, Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Fourbeard Rockling Eggs	Egg	May	F183-1229R-1-5-1-1-3-3.png	Contour Percentile	S.S.I.P. F.B. Rockling Eggs, May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling Eggs	Egg	May	F183-1229R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. F.B. Rockling Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fourbeard Rockling Eggs	Egg	May	F183-1229R-1-5-1-3-3-3.png	Contour Percentile	S.S.I.P. F.B. Rockling Eggs, May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Fourbeard Rockling Eggs	Egg	May	F183-1229R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. F.B. Rockling Eggs, May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling Eggs	Egg	May	F183-1229R-1-5-2-4-3-3.png	Contour Percentile	F.E.P F.B. Rockling Eggs, May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Fourbeard Rockling Eggs	Egg	June	F183-1229R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. F.B. Rockling Eggs, June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling Eggs	Egg	June	F183-1229R-1-6-2-2-3-3.png	Contour Percentile	F.E.P F.B. Rockling Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Fourbeard Rockling Eggs	Egg	June	F183-1229R-1-6-2-4-3-3.png	Contour Percentile	F.E.P F.B. Rockling Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Fourbeard Rockling Eggs	Egg	July	F183-1229R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. F.B. Rockling Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fourbeard Rockling Eggs	Egg	July	F183-1229R-1-7-1-4-3-3.png	Contour Percentile	S.S.I.P. F.B. Rockling Eggs, July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling Eggs	Egg	August	F183-1229R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. F.B. Rockling Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fourbeard Rockling Eggs	Egg	August	F183-1229R-1-8-1-3-3-3.png	Contour Percentile	S.S.I.P. F.B. Rockling Eggs, August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Fourbeard Rockling Eggs	Egg	August	F183-1229R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. F.B. Rockling Eggs, August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling Eggs	Egg	September	F183-1229R-1-9-1-2-3-3.png	Contour Percentile	S.S.I.P. F.B. Rockling Eggs, Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fourbeard Rockling Eggs	Egg	September	F183-1229R-1-9-1-3-3-3.png	Contour Percentile	S.S.I.P. F.B. Rockling Eggs, Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Fourbeard Rockling Eggs	Egg	September	F183-1229R-1-9-1-4-3-3.png	Contour Percentile	S.S.I.P. F.B. Rockling Eggs, Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling/ Hake	Larvae	October	F183-0195R-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Rockling Hake, Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling/ Hake	Larvae	August	F183-0195R-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Rockling Hake, Larvae August 1976-1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Fourbeard Rockling/ Hake	Larvae	August	F183-0195R-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Rockling Hake, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Fourbeard Rockling/ Hake	Larvae	August	F183-0195R-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Rockling Hake, Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Fourbeard Rockling/ Hake	Larvae	September	F183-0195R-2-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Rockling Hake, Larvae Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Fourbeard Rockling/ Hake	Larvae	September	F183-0195R-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Rockling Hake, Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Gadoids	Larvae	October	F183-0101R-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Gadoids, Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Gadoids	Larvae	September	F183-0101R-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Gadoids, Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Glacier Lanternfish	Larvae	April	F183-0157R-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Larvae	April	F183-0157R-2-4-2-2-3-3.png	Contour Percentile	F.E.P Glacier Lanternfish, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Glacier Lanternfish	Larvae	May	F183-0157R-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Larvae	May	F183-0157R-2-5-2-2-3-3.png	Contour Percentile	F.E.P Glacier Lanternfish, Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Glacier Lanternfish	Larvae	June	F183-0157R-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Larvae	June	F183-0157R-2-6-2-2-3-3.png	Contour Percentile	F.E.P Glacier Lanternfish, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Glacier Lanternfish	Larvae	July	F183-0157R-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Larvae	August	F183-0157R-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Juvenile	October	F183-0157R-3-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Juvenile Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Juvenile	November	F183-0157R-3-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Juvenile Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Juvenile	January	F183-0157R-3-1-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Juvenile Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Juvenile	April	F183-0157R-3-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Juvenile April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Juvenile	May	F183-0157R-3-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Juvenile May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Juvenile	June	F183-0157R-3-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Juvenile June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Juvenile	August	F183-0157R-3-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Juvenile August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Juvenile	August	F183-0157R-3-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Juvenile August 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Juvenile	September	F183-0157R-3-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Juvenile Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Juvenile	September	F183-0157R-3-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Juvenile Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Glacier Lanternfish	Adult	April	F183-0157R-4-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Adult April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Adult	May	F183-0157R-4-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Adult May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Adult	August	F183-0157R-4-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Adult August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Glacier Lanternfish	Adult	August	F183-0157R-4-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Glacier Lanternfish, Adult August 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Gobies unidentified	Larvae	October	F183-0804R-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Gobies,Unidentified, Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Gobies unidentified	Juvenile	October	F183-0804R-3-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Gobies,Unidentified, Juvenile Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Gulf Stream Flounder	Larvae	October	F183-0044R-2-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder, Larvae Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Gulf Stream Flounder	Larvae	October	F183-0044R-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder, Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Gulf Stream Flounder	Larvae	October	F183-0044R-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder, Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Gulf Stream Flounder	Larvae	August	F183-0044R-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder, Larvae August 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Gulf Stream Flounder	Larvae	August	F183-0044R-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Gulf Stream Flounder	Larvae	August	F183-0044R-2-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder, Larvae August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Gulf Stream Flounder	Larvae	September	F183-0044R-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder, Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Gulf Stream Flounder	Larvae	September	F183-0044R-2-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder, Larvae Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Gulf Stream Flounder	Larvae	September	F183-0044R-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder, Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Gulf Stream Flounder Eggs	Egg	October	F183-1250R-1-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder Eggs, Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Gulf Stream Flounder Eggs	Egg	October	F183-1250R-1-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder Eggs, Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Gulf Stream Flounder Eggs	Egg	October	F183-1250R-1-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder Eggs, Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Gulf Stream Flounder Eggs	Egg	June	F183-1250R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder Eggs, June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Gulf Stream Flounder Eggs	Egg	July	F183-1250R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Gulf Stream Flounder Eggs	Egg	August	F183-1250R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Gulf Stream Flounder Eggs	Egg	August	F183-1250R-1-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder Eggs, August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Gulf Stream Flounder Eggs	Egg	August	F183-1250R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder Eggs, August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Gulf Stream Flounder Eggs	Egg	September	F183-1250R-1-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder Eggs, Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Gulf Stream Flounder Eggs	Egg	September	F183-1250R-1-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder Eggs, Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Gulf Stream Flounder Eggs	Egg	September	F183-1250R-1-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Gulf Stream Flounder Eggs, Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Haddock	Larvae	March	F183-110-2-3-2-2-3-3.png	Contour Percentile	F.E.P Haddock, Larvae March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock	Larvae	March	F183-110-2-3-2-4-3-3.png	Contour Percentile	F.E.P Haddock, Larvae March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock	Larvae	April	F183-110-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Haddock, Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Haddock	Larvae	April	F183-110-2-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Haddock, Larvae April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Haddock	Larvae	April	F183-110-2-4-2-2-3-3.png	Contour Percentile	F.E.P Haddock, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock	Larvae	May	F183-110-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Haddock, Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Haddock	Larvae	May	F183-110-2-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Haddock, Larvae May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Haddock	Larvae	May	F183-110-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Haddock, Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Haddock	Larvae	May	F183-110-2-5-2-2-3-3.png	Contour Percentile	F.E.P Haddock, Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock	Larvae	May	F183-110-2-5-2-4-3-3.png	Contour Percentile	F.E.P Haddock, Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock	Larvae	June	F183-110-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Haddock, Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Haddock	Larvae	June	F183-110-2-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Haddock, Larvae June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Haddock	Larvae	June	F183-110-2-6-2-2-3-3.png	Contour Percentile	F.E.P Haddock, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock	Larvae	June	F183-110-2-6-2-4-3-3.png	Contour Percentile	F.E.P Haddock, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock	Juvenile	June	F183-110-3-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Haddock, Juvenile June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Haddock	Juvenile	June	F183-110-3-6-2-4-3-3.png	Contour Percentile	F.E.P Haddock, Juvenile June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock	Juvenile	July	F183-110-3-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Haddock, Juvenile July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Haddock	Juvenile	August	F183-110-3-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Haddock, Juvenile August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Haddock Eggs	Egg	January	F183-1212R-1-1-1-4-3-3.png	Contour Percentile	S.S.I.P. Haddock Eggs, Jan 1981-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Haddock Eggs	Egg	February	F183-1212R-1-2-1-4-3-3.png	Contour Percentile	S.S.I.P. Haddock Eggs, Feb 1980-1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Haddock Eggs	Egg	February	F183-1212R-1-2-2-2-3-3.png	Contour Percentile	F.E.P Haddock Eggs, Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock Eggs	Egg	March	F183-1212R-1-3-1-3-3-3.png	Contour Percentile	S.S.I.P. Haddock Eggs, March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Haddock Eggs	Egg	March	F183-1212R-1-3-2-2-3-3.png	Contour Percentile	F.E.P Haddock Eggs, March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock Eggs	Egg	March	F183-1212R-1-3-2-4-3-3.png	Contour Percentile	F.E.P Haddock Eggs, March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock Eggs	Egg	April	F183-1212R-1-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Haddock Eggs, April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Haddock Eggs	Egg	April	F183-1212R-1-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Haddock Eggs, April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Haddock Eggs	Egg	April	F183-1212R-1-4-2-2-3-3.png	Contour Percentile	F.E.P Haddock Eggs, April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock Eggs	Egg	April	F183-1212R-1-4-2-4-3-3.png	Contour Percentile	F.E.P Haddock Eggs, April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock Eggs	Egg	May	F183-1212R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Haddock Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Haddock Eggs	Egg	May	F183-1212R-1-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Haddock Eggs, May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Haddock Eggs	Egg	May	F183-1212R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Haddock Eggs, May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Haddock Eggs	Egg	May	F183-1212R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Haddock Eggs, May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock Eggs	Egg	May	F183-1212R-1-5-2-4-3-3.png	Contour Percentile	F.E.P Haddock Eggs, May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock Eggs	Egg	June	F183-1212R-1-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Haddock Eggs, June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Haddock Eggs	Egg	June	F183-1212R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Haddock Eggs, June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Haddock Eggs	Egg	June	F183-1212R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Haddock Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Haddock Eggs	Egg	June	F183-1212R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Haddock Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Hake	Larvae	August	F183-0035R-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Hake, Larvae August 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Hake	Larvae	August	F183-0035R-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Hake, Larvae August 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Hake	Larvae	September	F183-0035R-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake, Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake	Larvae	September	F183-0035R-2-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Hake, Larvae Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Hake	Juvenile	August	F183-0035R-3-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Hake, Juvenile August 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Hake	Larvae	October	F183-0193R-2-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Larvae Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake	Larvae	October	F183-0193R-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Hake	Larvae	October	F183-0193R-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake	Larvae	November	F183-0193R-2-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Larvae Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake	Larvae	July	F183-0193R-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake	Larvae	July	F183-0193R-2-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Larvae July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake	Larvae	August	F183-0193R-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Larvae August 1976-1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Hake	Larvae	August	F183-0193R-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake	Larvae	August	F183-0193R-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Hake	Larvae	August	F183-0193R-2-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Larvae August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake	Larvae	September	F183-0193R-2-9-1-1-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Larvae Sept 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Hake	Larvae	September	F183-0193R-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake	Larvae	September	F183-0193R-2-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Larvae Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Hake	Larvae	September	F183-0193R-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake	Juvenile	October	F183-0193R-3-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Juvenile Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Hake	Juvenile	August	F183-0193R-3-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Hake (Ns), Juvenile August 1976-1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Hake Eggs	Egg	October	F183-1246R-1-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake Eggs	Egg	October	F183-1246R-1-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Hake Eggs	Egg	October	F183-1246R-1-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Hake Eggs	Egg	May	F183-1246R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake Eggs	Egg	June	F183-1246R-1-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake Eggs	Egg	June	F183-1246R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake Eggs	Egg	June	F183-1246R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Hake Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Hake Eggs	Egg	June	F183-1246R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Hake Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Hake Eggs	Egg	July	F183-1246R-1-7-1-1-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, July 1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Hake Eggs	Egg	July	F183-1246R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake Eggs	Egg	July	F183-1246R-1-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake Eggs	Egg	August	F183-1246R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake Eggs	Egg	August	F183-1246R-1-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Hake Eggs	Egg	August	F183-1246R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake Eggs	Egg	September	F183-1246R-1-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake Eggs	Egg	September	F183-1246R-1-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Hake Eggs	Egg	September	F183-1246R-1-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Eggs, Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	October	F183-1236R-1-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	October	F183-1236R-1-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	October	F183-1236R-1-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	November	F183-1236R-1-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	November	F183-1236R-1-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	January	F183-1236R-1-1-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	January	F183-1236R-1-1-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs Jan 1981-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	February	F183-1236R-1-2-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs Feb 1979-1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	February	F183-1236R-1-2-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs Feb 1980-1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	February	F183-1236R-1-2-2-2-3-3.png	Contour Percentile	F.E.P Hake Sp./4brock/Butterfish/Windowpane, Eggs Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	March	F183-1236R-1-3-1-1-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs March 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	April	F183-1236R-1-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	April	F183-1236R-1-4-2-4-3-3.png	Contour Percentile	F.E.P Hake Sp./4brock/Butterfish/Windowpane, Eggs April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	May	F183-1236R-1-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	May	F183-1236R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	May	F183-1236R-1-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	May	F183-1236R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	May	F183-1236R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Hake Sp./4brock/Butterfish/Windowpane, Eggs May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	May	F183-1236R-1-5-2-4-3-3.png	Contour Percentile	F.E.P Hake Sp./4brock/Butterfish/Windowpane, Eggs May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	June	F183-1236R-1-6-1-1-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs June 1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	June	F183-1236R-1-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	June	F183-1236R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	June	F183-1236R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Hake Sp./4brock/Butterfish/Windowpane, Eggs June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	June	F183-1236R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Hake Sp./4brock/Butterfish/Windowpane, Eggs June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	July	F183-1236R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	July	F183-1236R-1-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	August	F183-1236R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	August	F183-1236R-1-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	August	F183-1236R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	September	F183-1236R-1-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	September	F183-1236R-1-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Hake/ Fourbeard Rockling/ Butterfish/ Windowpane flounder Eggs	Egg	September	F183-1236R-1-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Hake Sp./4brock/Butterfish/Windowpane, Eggs Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Horned Lanternfish	Larvae	October	F183-0163R-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Lanternfish,Horned, Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Horned Lanternfish	Larvae	August	F183-0163R-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Lanternfish,Horned, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Horned Lanternfish	Larvae	August	F183-0163R-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Lanternfish,Horned, Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Horned Lanternfish	Juvenile	August	F183-0163R-3-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Lanternfish,Horned, Juvenile August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Inquiline Seasnail	Larvae	April	F183-0508R-2-4-2-2-3-3.png	Contour Percentile	F.E.P Inquiline Seasnail, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Inquiline Seasnail	Larvae	May	F183-0508R-2-5-2-2-3-3.png	Contour Percentile	F.E.P Inquiline Seasnail, Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Inquiline Seasnail	Larvae	May	F183-0508R-2-5-2-4-3-3.png	Contour Percentile	F.E.P Inquiline Seasnail, Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Inquiline Seasnail	Larvae	June	F183-0508R-2-6-2-2-3-3.png	Contour Percentile	F.E.P Inquiline Seasnail, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Inquiline Seasnail	Larvae	June	F183-0508R-2-6-2-4-3-3.png	Contour Percentile	F.E.P Inquiline Seasnail, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Labrador Redfish	Juvenile	September	F183-0283R-3-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Labrador Redfish, Juvenile Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Lampanyctus sp.	Larvae	August	F183-0252R-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Lampanyctus Sp., Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Lanternfish	Larvae	October	F183-0150R-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Lanternfish (Ns), Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Lanternfish	Larvae	April	F183-0150R-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Lanternfish (Ns), Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Lanternfish	Larvae	April	F183-0150R-2-4-2-2-3-3.png	Contour Percentile	F.E.P Lanternfish (Ns), Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Lanternfish	Larvae	May	F183-0150R-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Lanternfish (Ns), Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Lanternfish	Larvae	May	F183-0150R-2-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Lanternfish (Ns), Larvae May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Lanternfish	Larvae	May	F183-0150R-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Lanternfish (Ns), Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Lanternfish	Larvae	May	F183-0150R-2-5-2-2-3-3.png	Contour Percentile	F.E.P Lanternfish (Ns), Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Lanternfish	Larvae	June	F183-0150R-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Lanternfish (Ns), Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Lanternfish	Larvae	June	F183-0150R-2-6-2-2-3-3.png	Contour Percentile	F.E.P Lanternfish (Ns), Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Lanternfish	Larvae	August	F183-0150R-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Lanternfish (Ns), Larvae August 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Lanternfish	Larvae	August	F183-0150R-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Lanternfish (Ns), Larvae August 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Lanternfish	Larvae	September	F183-0150R-2-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Lanternfish (Ns), Larvae Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Lanternfish	Juvenile	October	F183-0150R-3-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Lanternfish (Ns), Juvenile Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Lanternfish	Juvenile	August	F183-0150R-3-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Lanternfish (Ns), Juvenile August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Lefteye Flounder	Larvae	August	F183-0196R-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Lefteye Flounder, Larvae August 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Lefteye Flounder	Larvae	September	F183-0196R-2-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Lefteye Flounder, Larvae Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Little Grubby	Larvae	May	F183-0303R-2-5-2-2-3-3.png	Contour Percentile	F.E.P Grubby (Little), Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Little Grubby	Larvae	May	F183-0303R-2-5-2-4-3-3.png	Contour Percentile	F.E.P Grubby (Little), Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Little Grubby	Larvae	June	F183-0303R-2-6-2-2-3-3.png	Contour Percentile	F.E.P Grubby (Little), Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Little Grubby	Larvae	June	F183-0303R-2-6-2-4-3-3.png	Contour Percentile	F.E.P Grubby (Little), Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Longhorn Sculpin	Larvae	March	F183-0300R-2-3-2-2-3-3.png	Contour Percentile	F.E.P Longhorn Sculpin, Larvae March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Longhorn Sculpin	Larvae	April	F183-0300R-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Longhorn Sculpin, Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Longhorn Sculpin	Larvae	April	F183-0300R-2-4-2-2-3-3.png	Contour Percentile	F.E.P Longhorn Sculpin, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Longhorn Sculpin	Larvae	May	F183-0300R-2-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Longhorn Sculpin, Larvae May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Longhorn Sculpin	Larvae	May	F183-0300R-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Longhorn Sculpin, Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Longhorn Sculpin	Larvae	May	F183-0300R-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Longhorn Sculpin, Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Longhorn Sculpin	Larvae	May	F183-0300R-2-5-2-2-3-3.png	Contour Percentile	F.E.P Longhorn Sculpin, Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Longhorn Sculpin	Larvae	May	F183-0300R-2-5-2-4-3-3.png	Contour Percentile	F.E.P Longhorn Sculpin, Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Offshore Hake	Larvae	October	F183-0019R-2-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Off-Shore Hake, Larvae Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Offshore Hake	Larvae	October	F183-0019R-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Off-Shore Hake, Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Offshore Hake	Larvae	October	F183-0019R-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Off-Shore Hake, Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Offshore Hake	Larvae	November	F183-0019R-2-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Off-Shore Hake, Larvae Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Offshore Hake	Larvae	August	F183-0019R-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Off-Shore Hake, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Offshore Hake	Larvae	August	F183-0019R-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Off-Shore Hake, Larvae August 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Offshore Hake	Larvae	September	F183-0019R-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Off-Shore Hake, Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Offshore Hake Eggs	Egg	October	F183-1245R-1-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Offshore Hake Eggs, Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Offshore Hake Eggs	Egg	January	F183-1245R-1-1-1-2-3-3.png	Contour Percentile	S.S.I.P. Offshore Hake Eggs, Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Offshore Hake Eggs	Egg	April	F183-1245R-1-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Offshore Hake Eggs, April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Offshore Hake Eggs	Egg	May	F183-1245R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Offshore Hake Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Offshore Hake Eggs	Egg	May	F183-1245R-1-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Offshore Hake Eggs, May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Offshore Hake Eggs	Egg	July	F183-1245R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Offshore Hake Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Offshore Hake Eggs	Egg	August	F183-1245R-1-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Offshore Hake Eggs, August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Offshore Hake Eggs	Egg	September	F183-1245R-1-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Offshore Hake Eggs, Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Paralepis coregonoides	Larvae	March	F183-0674R-2-3-2-2-3-3.png	Contour Percentile	F.E.P Paralepis Coregonoides, Larvae March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Paralepis coregonoides	Larvae	April	F183-0674R-2-4-2-2-3-3.png	Contour Percentile	F.E.P Paralepis Coregonoides, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Larvae	November	F183-170-2-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Pollock, Larvae Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Pollock	Larvae	January	F183-170-2-1-1-1-3-3.png	Contour Percentile	S.S.I.P. Pollock, Larvae Jan 1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Pollock	Larvae	November	F183-170-2-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock, Larvae Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock	Larvae	January	F183-170-2-1-1-2-3-3.png	Contour Percentile	S.S.I.P. Pollock, Larvae Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Pollock	Larvae	January	F183-170-2-1-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock, Larvae Jan 1981-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock	Larvae	December	F183-170-2-12-1-2-3-3.png	Contour Percentile	S.S.I.P. Pollock, Larvae Dec 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Pollock	Larvae	December	F183-170-2-12-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock, Larvae Dec 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock	Larvae	February	F183-170-2-2-1-1-3-3.png	Contour Percentile	S.S.I.P. Pollock, Larvae Feb 1977,1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Pollock	Larvae	February	F183-170-2-2-1-2-3-3.png	Contour Percentile	S.S.I.P. Pollock, Larvae Feb 1979-1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Pollock	Larvae	February	F183-170-2-2-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock, Larvae Feb 1980-1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock	Larvae	February	F183-170-2-2-2-2-3-3.png	Contour Percentile	F.E.P Pollock, Larvae Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Larvae	February	F183-170-2-2-2-4-3-3.png	Contour Percentile	F.E.P Pollock, Larvae Feb 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Larvae	March	F183-170-2-3-2-2-3-3.png	Contour Percentile	F.E.P Pollock, Larvae March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Larvae	March	F183-170-2-3-2-4-3-3.png	Contour Percentile	F.E.P Pollock, Larvae March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Larvae	April	F183-170-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Pollock, Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Pollock	Larvae	April	F183-170-2-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock, Larvae April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock	Larvae	April	F183-170-2-4-2-2-3-3.png	Contour Percentile	F.E.P Pollock, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Larvae	April	F183-170-2-4-2-4-3-3.png	Contour Percentile	F.E.P Pollock, Larvae April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Larvae	May	F183-170-2-5-2-2-3-3.png	Contour Percentile	F.E.P Pollock, Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Larvae	May	F183-170-2-5-2-4-3-3.png	Contour Percentile	F.E.P Pollock, Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Pollock	Larvae	June	F183-170-2-6-2-2-3-3.png	Contour Percentile	F.E.P Pollock, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Larvae	June	F183-170-2-6-2-4-3-3.png	Contour Percentile	F.E.P Pollock, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Juvenile	February	F183-170-3-2-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock, Juvenile Feb 1980-1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock	Juvenile	February	F183-170-3-2-2-2-3-3.png	Contour Percentile	F.E.P Pollock, Juvenile Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Juvenile	February	F183-170-3-2-2-4-3-3.png	Contour Percentile	F.E.P Pollock, Juvenile Feb 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Juvenile	March	F183-170-3-3-2-2-3-3.png	Contour Percentile	F.E.P Pollock, Juvenile March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Juvenile	March	F183-170-3-3-2-4-3-3.png	Contour Percentile	F.E.P Pollock, Juvenile March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Juvenile	April	F183-170-3-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Pollock, Juvenile April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Pollock	Juvenile	April	F183-170-3-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock, Juvenile April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock	Juvenile	April	F183-170-3-4-2-2-3-3.png	Contour Percentile	F.E.P Pollock, Juvenile April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Juvenile	April	F183-170-3-4-2-4-3-3.png	Contour Percentile	F.E.P Pollock, Juvenile April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock	Juvenile	May	F183-170-3-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock, Juvenile May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock	Juvenile	May	F183-170-3-5-2-4-3-3.png	Contour Percentile	F.E.P Pollock, Juvenile May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock Eggs	Egg	October	F183-1247R-1-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock Eggs	Egg	November	F183-1247R-1-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Pollock Eggs	Egg	January	F183-1247R-1-1-1-1-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, Jan 1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Pollock Eggs	Egg	November	F183-1247R-1-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock Eggs	Egg	January	F183-1247R-1-1-1-2-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Pollock Eggs	Egg	January	F183-1247R-1-1-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, Jan 1981-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock Eggs	Egg	December	F183-1247R-1-12-1-2-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, Dec 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Pollock Eggs	Egg	December	F183-1247R-1-12-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, Dec 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock Eggs	Egg	February	F183-1247R-1-2-1-1-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, Feb 1977,1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Pollock Eggs	Egg	February	F183-1247R-1-2-1-2-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, Feb 1979-1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Pollock Eggs	Egg	February	F183-1247R-1-2-1-3-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, Feb 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Pollock Eggs	Egg	February	F183-1247R-1-2-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, Feb 1980-1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock Eggs	Egg	February	F183-1247R-1-2-2-2-3-3.png	Contour Percentile	F.E.P Pollock Eggs, Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock Eggs	Egg	February	F183-1247R-1-2-2-4-3-3.png	Contour Percentile	F.E.P Pollock Eggs, Feb 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock Eggs	Egg	March	F183-1247R-1-3-1-3-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Pollock Eggs	Egg	March	F183-1247R-1-3-2-2-3-3.png	Contour Percentile	F.E.P Pollock Eggs, March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock Eggs	Egg	March	F183-1247R-1-3-2-4-3-3.png	Contour Percentile	F.E.P Pollock Eggs, March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock Eggs	Egg	April	F183-1247R-1-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock Eggs	Egg	April	F183-1247R-1-4-2-2-3-3.png	Contour Percentile	F.E.P Pollock Eggs, April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock Eggs	Egg	April	F183-1247R-1-4-2-4-3-3.png	Contour Percentile	F.E.P Pollock Eggs, April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock Eggs	Egg	May	F183-1247R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Pollock Eggs	Egg	May	F183-1247R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Pollock Eggs	Egg	May	F183-1247R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Pollock Eggs, May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock Eggs	Egg	May	F183-1247R-1-5-2-4-3-3.png	Contour Percentile	F.E.P Pollock Eggs, May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock Eggs	Egg	June	F183-1247R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Pollock Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	EEP
Pollock Eggs	Egg	June	F183-1247R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Pollock Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Pollock Eggs	Egg	August	F183-1247R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Pollock Eggs	Egg	August	F183-1247R-1-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Pollock Eggs	Egg	September	F183-1247R-1-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Pollock Eggs	Egg	September	F183-1247R-1-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Pollock Eggs, Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Protomyctophum arcticum	Larvae	June	F183-0226R-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Protomyctophum Arcticum, Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Radiated Shanny	Larvae	October	F183-0625R-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Radiated Shanny, Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Radiated Shanny	Larvae	May	F183-0625R-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Radiated Shanny, Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Radiated Shanny	Larvae	May	F183-0625R-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Radiated Shanny, Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Radiated Shanny	Larvae	May	F183-0625R-2-5-2-4-3-3.png	Contour Percentile	F.E.P Radiated Shanny, Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Radiated Shanny	Larvae	June	F183-0625R-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Radiated Shanny, Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Radiated Shanny	Larvae	June	F183-0625R-2-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Radiated Shanny, Larvae June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Radiated Shanny	Larvae	June	F183-0625R-2-6-2-2-3-3.png	Contour Percentile	F.E.P Radiated Shanny, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Radiated Shanny	Larvae	June	F183-0625R-2-6-2-4-3-3.png	Contour Percentile	F.E.P Radiated Shanny, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Radiated Shanny	Larvae	July	F183-0625R-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Radiated Shanny, Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Radiated Shanny	Larvae	July	F183-0625R-2-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Radiated Shanny, Larvae July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Radiated Shanny	Larvae	August	F183-0625R-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Radiated Shanny, Larvae August 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Radiated Shanny	Larvae	August	F183-0625R-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Radiated Shanny, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Radiated Shanny	Larvae	September	F183-0625R-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Radiated Shanny, Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Red Hake	Juvenile	October	F183-180-3-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Squirrel Or Red Hake, Juvenile Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Red Hake	Juvenile	October	F183-180-3-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Squirrel Or Red Hake, Juvenile Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Red Hake	Juvenile	November	F183-180-3-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Squirrel Or Red Hake, Juvenile Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Red Hake	Juvenile	August	F183-180-3-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Squirrel Or Red Hake, Juvenile August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Red Hake	Juvenile	September	F183-180-3-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Squirrel Or Red Hake, Juvenile Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Red Hake	Juvenile	September	F183-180-3-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Squirrel Or Red Hake, Juvenile Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Redfish	Larvae	October	F183-120-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Redfish	Larvae	March	F183-120-2-3-1-1-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae March 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Redfish	Larvae	March	F183-120-2-3-1-2-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae March 1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Redfish	Larvae	March	F183-120-2-3-1-3-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Redfish	Larvae	March	F183-120-2-3-1-4-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae March 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Redfish	Larvae	March	F183-120-2-3-2-2-3-3.png	Contour Percentile	F.E.P Redfish Unseparated, Larvae March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Redfish	Larvae	April	F183-120-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Redfish	Larvae	April	F183-120-2-4-2-2-3-3.png	Contour Percentile	F.E.P Redfish Unseparated, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Redfish	Larvae	April	F183-120-2-4-2-4-3-3.png	Contour Percentile	F.E.P Redfish Unseparated, Larvae April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Redfish	Larvae	May	F183-120-2-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Redfish	Larvae	May	F183-120-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Redfish	Larvae	May	F183-120-2-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Redfish	Larvae	May	F183-120-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Redfish	Larvae	May	F183-120-2-5-2-2-3-3.png	Contour Percentile	F.E.P Redfish Unseparated, Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Redfish	Larvae	May	F183-120-2-5-2-4-3-3.png	Contour Percentile	F.E.P Redfish Unseparated, Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Redfish	Larvae	June	F183-120-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Redfish	Larvae	June	F183-120-2-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Redfish	Larvae	June	F183-120-2-6-2-2-3-3.png	Contour Percentile	F.E.P Redfish Unseparated, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Redfish	Larvae	June	F183-120-2-6-2-4-3-3.png	Contour Percentile	F.E.P Redfish Unseparated, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Redfish	Larvae	July	F183-120-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Redfish	Larvae	July	F183-120-2-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Redfish	Larvae	August	F183-120-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae August 1976-1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Redfish	Larvae	August	F183-120-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Redfish	Larvae	August	F183-120-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Redfish	Larvae	August	F183-120-2-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Redfish	Larvae	September	F183-120-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Redfish	Larvae	September	F183-120-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Redfish	Juvenile	August	F183-120-3-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Redfish Unseparated, Juvenile August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Rock Gunnel	Larvae	March	F183-0621R-2-3-1-3-3-3.png	Contour Percentile	S.S.I.P. Rock Gunnel (Eel), Larvae March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Rock Gunnel	Larvae	March	F183-0621R-2-3-2-2-3-3.png	Contour Percentile	F.E.P Rock Gunnel (Eel), Larvae March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Rock Gunnel	Larvae	March	F183-0621R-2-3-2-4-3-3.png	Contour Percentile	F.E.P Rock Gunnel (Eel), Larvae March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Rock Gunnel	Larvae	April	F183-0621R-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Rock Gunnel (Eel), Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Rock Gunnel	Larvae	April	F183-0621R-2-4-2-2-3-3.png	Contour Percentile	F.E.P Rock Gunnel (Eel), Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Rock Gunnel	Larvae	April	F183-0621R-2-4-2-4-3-3.png	Contour Percentile	F.E.P Rock Gunnel (Eel), Larvae April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Rock Gunnel	Larvae	May	F183-0621R-2-5-2-2-3-3.png	Contour Percentile	F.E.P Rock Gunnel (Eel), Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Rock Gunnel	Larvae	May	F183-0621R-2-5-2-4-3-3.png	Contour Percentile	F.E.P Rock Gunnel (Eel), Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Rock Gunnel	Juvenile	May	F183-0621R-3-5-2-2-3-3.png	Contour Percentile	F.E.P Rock Gunnel (Eel), Juvenile May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Rock Gunnel	Juvenile	May	F183-0621R-3-5-2-4-3-3.png	Contour Percentile	F.E.P Rock Gunnel (Eel), Juvenile May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Larvae	November	F183-178-2-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sand Lance	Larvae	November	F183-178-2-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Larvae	January	F183-178-2-1-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sand Lance	Larvae	January	F183-178-2-1-1-4-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae Jan 1981-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Larvae	December	F183-178-2-12-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae Dec 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sand Lance	Larvae	December	F183-178-2-12-1-4-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae Dec 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Larvae	February	F183-178-2-2-1-1-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae Feb 1977,1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Sand Lance	Larvae	February	F183-178-2-2-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae Feb 1979-1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sand Lance	Larvae	February	F183-178-2-2-1-3-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae Feb 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Sand Lance	Larvae	February	F183-178-2-2-1-4-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae Feb 1980-1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Larvae	February	F183-178-2-2-2-2-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Larvae Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Larvae	February	F183-178-2-2-2-4-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Larvae Feb 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Larvae	March	F183-178-2-3-1-1-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae March 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Larvae	March	F183-178-2-3-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae March 1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sand Lance	Larvae	March	F183-178-2-3-1-3-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Sand Lance	Larvae	March	F183-178-2-3-1-4-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae March 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Larvae	March	F183-178-2-3-2-2-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Larvae March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Larvae	March	F183-178-2-3-2-4-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Larvae March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Larvae	April	F183-178-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sand Lance	Larvae	April	F183-178-2-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Larvae	April	F183-178-2-4-2-2-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Larvae	April	F183-178-2-4-2-4-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Larvae April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Larvae	May	F183-178-2-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Larvae	May	F183-178-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sand Lance	Larvae	May	F183-178-2-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Sand Lance	Larvae	May	F183-178-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Larvae	May	F183-178-2-5-2-2-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Larvae	May	F183-178-2-5-2-4-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Sand Lance	Larvae	June	F183-178-2-6-1-1-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae June 1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Larvae	June	F183-178-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sand Lance	Larvae	June	F183-178-2-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Larvae	June	F183-178-2-6-2-2-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Larvae	June	F183-178-2-6-2-4-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Larvae	July	F183-178-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sand Lance	Larvae	July	F183-178-2-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Larvae	August	F183-178-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sand Lance	Larvae	August	F183-178-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Larvae August 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Sand Lance	Juvenile	March	F183-178-3-3-2-4-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Juvenile March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Juvenile	April	F183-178-3-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Juvenile April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sand Lance	Juvenile	April	F183-178-3-4-2-2-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Juvenile April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Juvenile	April	F183-178-3-4-2-4-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Juvenile April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Juvenile	May	F183-178-3-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Juvenile May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Juvenile	May	F183-178-3-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Juvenile May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sand Lance	Juvenile	May	F183-178-3-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Juvenile May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Sand Lance	Juvenile	May	F183-178-3-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Juvenile May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Juvenile	May	F183-178-3-5-2-2-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Juvenile May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Juvenile	May	F183-178-3-5-2-4-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Juvenile May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Juvenile	June	F183-178-3-6-1-1-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Juvenile June 1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Juvenile	June	F183-178-3-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Juvenile June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Sand Lance	Juvenile	June	F183-178-3-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Juvenile June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Juvenile	June	F183-178-3-6-2-2-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Juvenile June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Juvenile	June	F183-178-3-6-2-4-3-3.png	Contour Percentile	F.E.P Sand Lance (Ns), Juvenile June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sand Lance	Juvenile	July	F183-178-3-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Juvenile July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sand Lance	Juvenile	July	F183-178-3-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Juvenile July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Sand Lance	Juvenile	August	F183-178-3-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Sand Lance (Ns), Juvenile August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sculpin	Larvae	April	F183-0318R-2-4-2-2-3-3.png	Contour Percentile	F.E.P Sculpin, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sculpin (NS)	Larvae	January	F183-0309R-2-1-1-2-3-3.png	Contour Percentile	S.S.I.P. Sculpin (Ns), Larvae Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sculpin (NS)	Larvae	February	F183-0309R-2-2-1-1-3-3.png	Contour Percentile	S.S.I.P. Sculpin (Ns), Larvae Feb 1977,1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Sculpin (NS)	Larvae	February	F183-0309R-2-2-1-2-3-3.png	Contour Percentile	S.S.I.P. Sculpin (Ns), Larvae Feb 1979-1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sculpin (NS)	Larvae	February	F183-0309R-2-2-1-4-3-3.png	Contour Percentile	S.S.I.P. Sculpin (Ns), Larvae Feb 1980-1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Sculpin (NS)	Larvae	February	F183-0309R-2-2-2-2-3-3.png	Contour Percentile	F.E.P Sculpin (Ns), Larvae Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sculpin (NS)	Larvae	February	F183-0309R-2-2-2-4-3-3.png	Contour Percentile	F.E.P Sculpin (Ns), Larvae Feb 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sculpin (NS)	Larvae	March	F183-0309R-2-3-1-3-3-3.png	Contour Percentile	S.S.I.P. Sculpin (Ns), Larvae March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Sculpin (NS)	Larvae	March	F183-0309R-2-3-2-2-3-3.png	Contour Percentile	F.E.P Sculpin (Ns), Larvae March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sculpin (NS)	Larvae	April	F183-0309R-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Sculpin (Ns), Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Sculpin (NS)	Larvae	April	F183-0309R-2-4-2-2-3-3.png	Contour Percentile	F.E.P Sculpin (Ns), Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Sea Raven	Larvae	May	F183-0320R-2-5-2-4-3-3.png	Contour Percentile	F.E.P Sea Raven, Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Seasnail	Larvae	April	F183-0500R-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Seasnail Unidentified, Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Seasnail	Larvae	April	F183-0500R-2-4-2-2-3-3.png	Contour Percentile	F.E.P Seasnail Unidentified, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Seasnail	Larvae	May	F183-0500R-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Seasnail Unidentified, Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Seasnail	Larvae	May	F183-0500R-2-5-2-2-3-3.png	Contour Percentile	F.E.P Seasnail Unidentified, Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Seasnail	Larvae	June	F183-0500R-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Seasnail Unidentified, Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Seasnail	Larvae	June	F183-0500R-2-6-2-2-3-3.png	Contour Percentile	F.E.P Seasnail Unidentified, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Seasnail	Larvae	June	F183-0500R-2-6-2-4-3-3.png	Contour Percentile	F.E.P Seasnail Unidentified, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Seasnail	Larvae	July	F183-0500R-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Seasnail Unidentified, Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Seasnail	Larvae	August	F183-0500R-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Seasnail Unidentified, Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Shanny unidentified	Larvae	March	F183-0645R-2-3-1-2-3-3.png	Contour Percentile	S.S.I.P. Shanny-Unidentified, Larvae March 1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Shanny unidentified	Larvae	May	F183-0645R-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Shanny-Unidentified, Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Shanny unidentified	Larvae	May	F183-0645R-2-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Shanny-Unidentified, Larvae May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Shanny unidentified	Larvae	May	F183-0645R-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Shanny-Unidentified, Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Shorthorn Sculpin	Larvae	May	F183-0301R-2-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Shorthorn Sculpin, Larvae May 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Shorthorn Sculpin	Larvae	May	F183-0301R-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Shorthorn Sculpin, Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Shorthorn Sculpin	Larvae	May	F183-0301R-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Shorthorn Sculpin, Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Shorthorn Sculpin	Larvae	May	F183-0301R-2-5-2-2-3-3.png	Contour Percentile	F.E.P Shorthorn Sculpin, Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Shorthorn Sculpin	Larvae	May	F183-0301R-2-5-2-4-3-3.png	Contour Percentile	F.E.P Shorthorn Sculpin, Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Shorthorn Sculpin	Larvae	June	F183-0301R-2-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Shorthorn Sculpin, Larvae June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Shrimp Eel	Larvae	August	F183-0451R-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Shrimp Eel, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake	Larvae	October	F183-172-2-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Larvae Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake	Larvae	October	F183-172-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Silver Hake	Larvae	October	F183-172-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Silver Hake	Larvae	November	F183-172-2-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Larvae Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Silver Hake	Larvae	November	F183-172-2-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Larvae Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Silver Hake	Larvae	July	F183-172-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake	Larvae	July	F183-172-2-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Larvae July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Silver Hake	Larvae	August	F183-172-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Larvae August 1976-1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Silver Hake	Larvae	August	F183-172-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake	Larvae	August	F183-172-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Silver Hake	Larvae	August	F183-172-2-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Larvae August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Silver Hake	Larvae	September	F183-172-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake	Larvae	September	F183-172-2-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Larvae Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Silver Hake	Larvae	September	F183-172-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Silver Hake	Juvenile	October	F183-172-3-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Juvenile Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake	Juvenile	October	F183-172-3-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Juvenile Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Silver Hake	Juvenile	October	F183-172-3-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Juvenile Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Silver Hake	Juvenile	November	F183-172-3-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Juvenile Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake	Juvenile	August	F183-172-3-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Juvenile August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake	Juvenile	September	F183-172-3-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Juvenile Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake	Juvenile	September	F183-172-3-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Juvenile Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Silver Hake	Juvenile	September	F183-172-3-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Silver Hake, Juvenile Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	October	F183-1239R-1-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	October	F183-1239R-1-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	October	F183-1239R-1-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Silver Hake Eggs	Egg	April	F183-1239R-1-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	May	F183-1239R-1-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	May	F183-1239R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	May	F183-1239R-1-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	May	F183-1239R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	May	F183-1239R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Silver Hake Eggs, May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Silver Hake Eggs	Egg	May	F183-1239R-1-5-2-4-3-3.png	Contour Percentile	F.E.P Silver Hake Eggs, May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Silver Hake Eggs	Egg	June	F183-1239R-1-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	June	F183-1239R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	June	F183-1239R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Silver Hake Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Silver Hake Eggs	Egg	June	F183-1239R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Silver Hake Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Silver Hake Eggs	Egg	July	F183-1239R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	July	F183-1239R-1-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	August	F183-1239R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	August	F183-1239R-1-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, August 1976-1977. 61 cm.Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	August	F183-1239R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	September	F183-1239R-1-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	September	F183-1239R-1-9-1-3-3-3 png	Contour Percentile	S.S.I.P. Silver Hake Eggs, Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Silver Hake Eggs	Egg	September	F183-1239R-1-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Silver Hake Eggs, Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Silver Hake/ Longfinned Hake/ Fourbeard Rockling Egg	Egg	March	F183-1241R-1-3-1-1-3-3.png	Contour Percentile	S.S.I.P. S/L.F.Hake/4b Rock. Eggs, March 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Silver Hake/ Longfinned Hake/ Fourbeard Rockling Egg	Egg	May	F183-1241R-1-5-1-1-3-3.png	Contour Percentile	S.S.I.P. S/L.F.Hake/4b Rock. Eggs, May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Snake Blenny	Larvae	February	F183-0622R-2-2-1-1-3-3.png	Contour Percentile	S.S.I.P. Snake Blenny, Larvae Feb 1977,1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Snake Blenny	Larvae	February	F183-0622R-2-2-1-3-3-3.png	Contour Percentile	S.S.I.P. Snake Blenny, Larvae Feb 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Snake Blenny	Larvae	March	F183-0622R-2-3-1-2-3-3.png	Contour Percentile	S.S.I.P. Snake Blenny, Larvae March 1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Snake Blenny	Larvae	March	F183-0622R-2-3-1-3-3-3.png	Contour Percentile	S.S.I.P. Snake Blenny, Larvae March 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Snake Blenny	Larvae	March	F183-0622R-2-3-1-4-3-3.png	Contour Percentile	S.S.I.P. Snake Blenny, Larvae March 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Snake Blenny	Larvae	April	F183-0622R-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Snake Blenny, Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Snake Blenny	Larvae	April	F183-0622R-2-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Snake Blenny, Larvae April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Snake Blenny	Larvae	April	F183-0622R-2-4-2-2-3-3.png	Contour Percentile	F.E.P Snake Blenny, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Snake Blenny	Larvae	April	F183-0622R-2-4-2-4-3-3.png	Contour Percentile	F.E.P Snake Blenny, Larvae April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Snake Blenny	Larvae	May	F183-0622R-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Snake Blenny, Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Snake Blenny	Larvae	May	F183-0622R-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Snake Blenny, Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Unidentified Fish	Larvae	October	F183-0090R-2-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Unidentified Fish	Larvae	October	F183-0090R-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Unidentified Fish	Larvae	October	F183-0090R-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Unidentified Fish	Larvae	November	F183-0090R-2-11-1-2-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae Nov 1979-1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Unidentified Fish	Larvae	November	F183-0090R-2-11-1-4-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae Nov 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Unidentified Fish	Larvae	January	F183-0090R-2-1-1-2-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae Jan 1979,1981-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Unidentified Fish	Larvae	January	F183-0090R-2-1-1-4-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae Jan 1981-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Unidentified Fish	Larvae	December	F183-0090R-2-12-1-4-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae Dec 1979-1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Unidentified Fish	Larvae	February	F183-0090R-2-2-1-1-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae Feb 1977,1979. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Unidentified Fish	Larvae	February	F183-0090R-2-2-1-2-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae Feb 1979-1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Unidentified Fish	Larvae	February	F183-0090R-2-2-2-2-3-3.png	Contour Percentile	F.E.P Unid. Fish, Larvae Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Unidentified Fish	Larvae	February	F183-0090R-2-2-2-4-3-3.png	Contour Percentile	F.E.P Unid. Fish, Larvae Feb 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Unidentified Fish	Larvae	March	F183-0090R-2-3-1-4-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae March 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Unidentified Fish	Larvae	March	F183-0090R-2-3-2-2-3-3.png	Contour Percentile	F.E.P Unid. Fish, Larvae March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Unidentified Fish	Larvae	March	F183-0090R-2-3-2-4-3-3.png	Contour Percentile	F.E.P Unid. Fish, Larvae March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Unidentified Fish	Larvae	April	F183-0090R-2-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Unidentified Fish	Larvae	April	F183-0090R-2-4-2-2-3-3.png	Contour Percentile	F.E.P Unid. Fish, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Unidentified Fish	Larvae	April	F183-0090R-2-4-2-4-3-3.png	Contour Percentile	F.E.P Unid. Fish, Larvae April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Unidentified Fish	Larvae	May	F183-0090R-2-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Unidentified Fish	Larvae	May	F183-0090R-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Unidentified Fish	Larvae	May	F183-0090R-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Unidentified Fish	Larvae	May	F183-0090R-2-5-2-2-3-3.png	Contour Percentile	F.E.P Unid. Fish, Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Unidentified Fish	Larvae	May	F183-0090R-2-5-2-4-3-3.png	Contour Percentile	F.E.P Unid. Fish, Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Unidentified Fish	Larvae	June	F183-0090R-2-6-1-1-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae June 1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Unidentified Fish	Larvae	June	F183-0090R-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Unidentified Fish	Larvae	June	F183-0090R-2-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Unidentified Fish	Larvae	June	F183-0090R-2-6-2-2-3-3.png	Contour Percentile	F.E.P Unid. Fish, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Unidentified Fish	Larvae	June	F183-0090R-2-6-2-4-3-3.png	Contour Percentile	F.E.P Unid. Fish, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Unidentified Fish	Larvae	July	F183-0090R-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Unidentified Fish	Larvae	July	F183-0090R-2-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Unidentified Fish	Larvae	August	F183-0090R-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae August 1976-1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Unidentified Fish	Larvae	August	F183-0090R-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Unidentified Fish	Larvae	August	F183-0090R-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Unidentified Fish	Larvae	August	F183-0090R-2-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Unidentified Fish	Larvae	September	F183-0090R-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Unidentified Fish	Larvae	September	F183-0090R-2-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Unidentified Fish	Larvae	September	F183-0090R-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Unid. Fish, Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Veiled Anglemouth	Juvenile	August	F183-0154R-3-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Veiled Angle Mouth, Juvenile August 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
White Barracudina	Larvae	October	F183-0727R-2-10-1-2-3-3.png	Contour Percentile	S.S.I.P. White Barracudina, Larvae Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
White Barracudina	Larvae	October	F183-0727R-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. White Barracudina, Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
White Barracudina	Larvae	February	F183-0727R-2-2-2-2-3-3.png	Contour Percentile	F.E.P White Barracudina, Larvae Feb 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
White Barracudina	Larvae	March	F183-0727R-2-3-2-2-3-3.png	Contour Percentile	F.E.P White Barracudina, Larvae March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
White Barracudina	Larvae	April	F183-0727R-2-4-2-2-3-3.png	Contour Percentile	F.E.P White Barracudina, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
White Barracudina	Larvae	June	F183-0727R-2-6-2-2-3-3.png	Contour Percentile	F.E.P White Barracudina, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
White Barracudina	Larvae	September	F183-0727R-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. White Barracudina, Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
White Hake	Juvenile	June	F183-171-3-6-1-4-3-3.png	Contour Percentile	S.S.I.P. White Hake, Juvenile June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
White Hake	Juvenile	June	F183-171-3-6-2-2-3-3.png	Contour Percentile	F.E.P White Hake, Juvenile June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
White Hake	Juvenile	June	F183-171-3-6-2-4-3-3.png	Contour Percentile	F.E.P White Hake, Juvenile June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
White Hake	Juvenile	July	F183-171-3-7-1-4-3-3.png	Contour Percentile	S.S.I.P. White Hake, Juvenile July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
White Hake	Juvenile	August	F183-171-3-8-1-4-3-3.png	Contour Percentile	S.S.I.P. White Hake, Juvenile August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
White Hake	Juvenile	September	F183-171-3-9-1-4-3-3.png	Contour Percentile	S.S.I.P. White Hake, Juvenile Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Windowpane	Larvae	October	F183-0143R-2-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Brill/Windowpane, Larvae Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Windowpane	Larvae	October	F183-0143R-2-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Brill/Windowpane, Larvae Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Windowpane	Larvae	July	F183-0143R-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Brill/Windowpane, Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Windowpane	Larvae	July	F183-0143R-2-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Brill/Windowpane, Larvae July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Windowpane	Larvae	August	F183-0143R-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Brill/Windowpane, Larvae August 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Windowpane	Larvae	August	F183-0143R-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Brill/Windowpane, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Windowpane	Larvae	August	F183-0143R-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Brill/Windowpane, Larvae August 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Windowpane	Larvae	August	F183-0143R-2-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Brill/Windowpane, Larvae August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Windowpane	Larvae	September	F183-0143R-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Brill/Windowpane, Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Windowpane	Larvae	September	F183-0143R-2-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Brill/Windowpane, Larvae Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Windowpane	Larvae	September	F183-0143R-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Brill/Windowpane, Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Winter Flounder	Larvae	April	F183-143-2-4-2-2-3-3.png	Contour Percentile	F.E.P Winter Flounder, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Winter Flounder	Larvae	May	F183-143-2-5-2-2-3-3.png	Contour Percentile	F.E.P Winter Flounder, Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Winter Flounder	Larvae	May	F183-143-2-5-2-4-3-3.png	Contour Percentile	F.E.P Winter Flounder, Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Winter Flounder	Larvae	June	F183-143-2-6-2-2-3-3.png	Contour Percentile	F.E.P Winter Flounder, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Winter Flounder	Larvae	June	F183-143-2-6-2-4-3-3.png	Contour Percentile	F.E.P Winter Flounder, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Winter Flounder	Larvae	July	F183-143-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Winter Flounder, Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Winter Flounder Eggs	Egg	April	F183-1253R-1-4-2-2-3-3.png	Contour Percentile	F.E.P Winter Flounder Eggs, April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Winter Flounder Eggs	Egg	May	F183-1253R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Winter Flounder Eggs, May 1983,1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Witch Flounder	Larvae	October	F183-142-2-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Witch Flounder, Larvae Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Witch Flounder	Larvae	October	F183-142-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Witch Flounder, Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Witch Flounder	Larvae	June	F183-142-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P Witch Flounder, Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Witch Flounder	Larvae	June	F183-142-2-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Witch Flounder, Larvae June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Witch Flounder	Larvae	June	F183-142-2-6-2-2-3-3.png	Contour Percentile	F.E.P Witch Flounder, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Witch Flounder	Larvae	June	F183-142-2-6-2-4-3-3.png	Contour Percentile	F.E.P Witch Flounder, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Witch Flounder	Larvae	July	F183-142-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Witch Flounder, Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Witch Flounder	Larvae	July	F183-142-2-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Witch Flounder, Larvae July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Witch Flounder	Larvae	August	F183-142-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Witch Flounder, Larvae August 1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Witch Flounder	Larvae	August	F183-142-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Witch Flounder, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Witch Flounder	Larvae	August	F183-142-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Witch Flounder, Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Witch Flounder	Larvae	August	F183-142-2-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Witch Flounder, Larvae August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Witch Flounder	Larvae	September	F183-142-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Witch Flounder, Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Witch Flounder	Larvae	September	F183-142-2-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Witch Flounder, Larvae Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Witch Flounder	Larvae	September	F183-142-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Witch Flounder, Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Witch flounder Eggs	Egg	October	F183-1227R-1-10-1-2-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, Oct 1979-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Witch flounder Eggs	Egg	October	F183-1227R-1-10-1-4-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, Oct 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Witch flounder Eggs	Egg	May	F183-1227R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Witch flounder Eggs	Egg	May	F183-1227R-1-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Witch flounder Eggs	Egg	May	F183-1227R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Witch flounder Eggs	Egg	June	F183-1227R-1-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Witch flounder Eggs	Egg	June	F183-1227R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Witch flounder Eggs	Egg	June	F183-1227R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Witch Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Witch flounder Eggs	Egg	June	F183-1227R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Witch Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Witch flounder Eggs	Egg	July	F183-1227R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Witch flounder Eggs	Egg	July	F183-1227R-1-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Witch flounder Eggs	Egg	August	F183-1227R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Witch flounder Eggs	Egg	August	F183-1227R-1-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Witch flounder Eggs	Egg	August	F183-1227R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Witch flounder Eggs	Egg	September	F183-1227R-1-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Witch flounder Eggs	Egg	September	F183-1227R-1-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Witch flounder Eggs	Egg	September	F183-1227R-1-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Witch Eggs, Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Wrasses	Larvae	October	F183-0036R-2-10-1-3-3-3.png	Contour Percentile	S.S.I.P. Wrasses, Larvae Oct 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Wrymouth	Larvae	March	F183-0630R-2-3-2-4-3-3.png	Contour Percentile	F.E.P Wrymouth, Larvae March 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Wrymouth	Larvae	April	F183-0630R-2-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Wrymouth, Larvae April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Wrymouth	Larvae	April	F183-0630R-2-4-2-2-3-3.png	Contour Percentile	F.E.P Wrymouth, Larvae April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Wrymouth	Larvae	April	F183-0630R-2-4-2-4-3-3.png	Contour Percentile	F.E.P Wrymouth, Larvae April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Wrymouth	Juvenile	May	F183-0630R-3-5-1-1-3-3.png	Contour Percentile	S.S.I.P. Wrymouth, Juvenile May 1977-1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Wrymouth	Juvenile	May	F183-0630R-3-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Wrymouth, Juvenile May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Wrymouth	Juvenile	May	F183-0630R-3-5-2-4-3-3.png	Contour Percentile	F.E.P Wrymouth, Juvenile May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Yellowtail Flounder	Larvae	May	F183-141-2-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Larvae May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Yellowtail Flounder	Larvae	May	F183-141-2-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Larvae May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Yellowtail Flounder	Larvae	May	F183-141-2-5-2-2-3-3.png	Contour Percentile	F.E.P Yellowtail Flounder, Larvae May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Yellowtail Flounder	Larvae	May	F183-141-2-5-2-4-3-3.png	Contour Percentile	F.E.P Yellowtail Flounder, Larvae May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Yellowtail Flounder	Larvae	June	F183-141-2-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Larvae June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Yellowtail Flounder	Larvae	June	F183-141-2-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Larvae June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Yellowtail Flounder	Larvae	June	F183-141-2-6-2-2-3-3.png	Contour Percentile	F.E.P Yellowtail Flounder, Larvae June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Yellowtail Flounder	Larvae	June	F183-141-2-6-2-4-3-3.png	Contour Percentile	F.E.P Yellowtail Flounder, Larvae June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Yellowtail Flounder	Larvae	July	F183-141-2-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Larvae July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Yellowtail Flounder	Larvae	July	F183-141-2-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Larvae July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Yellowtail Flounder	Larvae	August	F183-141-2-8-1-1-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Larvae August 1976-1977. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Yellowtail Flounder	Larvae	August	F183-141-2-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Larvae August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Yellowtail Flounder	Larvae	August	F183-141-2-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Larvae August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Yellowtail Flounder	Larvae	August	F183-141-2-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Larvae August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Yellowtail Flounder	Larvae	September	F183-141-2-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Larvae Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Yellowtail Flounder	Larvae	September	F183-141-2-9-1-3-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Larvae Sept 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Yellowtail Flounder	Larvae	September	F183-141-2-9-1-4-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Larvae Sept 1979-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Yellowtail Flounder	Juvenile	August	F183-141-3-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Juvenile August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Yellowtail Flounder	Juvenile	August	F183-141-3-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Juvenile August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Yellowtail Flounder	Juvenile	September	F183-141-3-9-1-2-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Flounder, Juvenile Sept 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Yellowtail flounder Eggs	Egg	March	F183-1230R-1-3-2-2-3-3.png	Contour Percentile	F.E.P Yellowtail Eggs, March 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Yellowtail flounder Eggs	Egg	April	F183-1230R-1-4-1-2-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Eggs, April 1979,1981. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Yellowtail flounder Eggs	Egg	April	F183-1230R-1-4-1-4-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Eggs, April 1981. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Yellowtail flounder Eggs	Egg	April	F183-1230R-1-4-2-2-3-3.png	Contour Percentile	F.E.P Yellowtail Eggs, April 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Yellowtail flounder Eggs	Egg	April	F183-1230R-1-4-2-4-3-3.png	Contour Percentile	F.E.P Yellowtail Eggs, April 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Yellowtail flounder Eggs	Egg	May	F183-1230R-1-5-1-2-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Eggs, May 1979-1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Yellowtail flounder Eggs	Egg	May	F183-1230R-1-5-1-3-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Eggs, May 1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Yellowtail flounder Eggs	Egg	May	F183-1230R-1-5-1-4-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Eggs, May 1979-1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Yellowtail flounder Eggs	Egg	May	F183-1230R-1-5-2-2-3-3.png	Contour Percentile	F.E.P Yellowtail Eggs, May 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Yellowtail flounder Eggs	Egg	May	F183-1230R-1-5-2-4-3-3.png	Contour Percentile	F.E.P Yellowtail Eggs, May 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

Species	Stage	Month	Filename	Map Type	Caption	Location	Survey
Yellowtail flounder Eggs	Egg	June	F183-1230R-1-6-1-1-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Eggs, June 1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Yellowtail flounder Eggs	Egg	June	F183-1230R-1-6-1-2-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Eggs, June 1980. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Yellowtail flounder Eggs	Egg	June	F183-1230R-1-6-1-4-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Eggs, June 1980. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Yellowtail flounder Eggs	Egg	June	F183-1230R-1-6-2-2-3-3.png	Contour Percentile	F.E.P Yellowtail Eggs, June 1983-1985. 61 cm Bongo, MARMAP Double Oblique	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Yellowtail flounder Eggs	Egg	June	F183-1230R-1-6-2-4-3-3.png	Contour Percentile	F.E.P Yellowtail Eggs, June 1983-1985. 61 cm Bongo, Surface Tow	Western Scotian Shelf, Southwest Nova Scotia Shelf	FEP
Yellowtail flounder Eggs	Egg	July	F183-1230R-1-7-1-1-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Eggs, July 1978. 1.0 Meter Net, Surface Tow	Scotian Shelf	SSIP
Yellowtail flounder Eggs	Egg	July	F183-1230R-1-7-1-2-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Eggs, July 1980,1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Yellowtail flounder Eggs	Egg	July	F183-1230R-1-7-1-4-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Eggs, July 1980,1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP
Yellowtail flounder Eggs	Egg	August	F183-1230R-1-8-1-2-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Eggs, August 1978-1982. 61 cm Bongo, MARMAP Double Oblique	Scotian Shelf	SSIP
Yellowtail flounder Eggs	Egg	August	F183-1230R-1-8-1-3-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Eggs, August 1976-1977. 61 cm Bongo, Old Stepped Oblique	Scotian Shelf	SSIP
Yellowtail flounder Eggs	Egg	August	F183-1230R-1-8-1-4-3-3.png	Contour Percentile	S.S.I.P. Yellowtail Eggs, August 1980-1982. 61 cm Bongo, Surface Tow	Scotian Shelf	SSIP

Filename: Maps are available as well as Mapinfo files and in MID/MIF interchange format.

APPENDIX H — CATALOGUE OF MAPS AND ILLUSTRATIONS OF SPAWNING AREAS AND DISTRIBUTIONS OF FISH EGGS AND LARVAE FOR THE SCOTIAN SHELF AND ADJACENT WATERS AVAILABLE IN MAPINFO AND MID/MIF TRANSFER FORMAT IN EAISSNA DATABASE.

Appendix H - Catalogue of maps and illustrations of spawning areas and distributions of fish eggs and larvae for the Scotian Shelf and adjacent waters available in MapInfo and MID/MIF transfer format in EAISSNA database.

Species	Stage	Activity	Filename	Map Type	Caption	Location	Reference
American Plaice	Adult	Spawning	F79-140-4.png	Contour Abundance	Distribution of American plaice eggs and larvae in the Northwest Atlantic regions (Scotian, US Northeast Atlantic, Newfoundland and Labrador Shelves), 1959-70.	Labrador Shelf, Scotian Shelf, Newfoundland Shelf, Gulf of Maine	Nevinsky and Serebryakov 1973
Atlantic Herring	Adult	Spawning	F93-200-4-sp.png	Area Map	Spawning areas of Atlantic herring in the Georges Bank-Gulf of Maine area, 1962-70.	Georges Bank, Gulf of Maine	Boyar et al. 1973
Atlantic Herring	Adult	Spawning	F3-200-4-sp1.png	Area Map	Major herring spawning areas in Gulf of Maine and Western Scotian Shelf, pre-1986.	Georges Bank, Jeffreys Ledge, Cape Cod Bay	Halliday et al. 1986
Atlantic Herring	Adult	Spawning	F8-200-4-sp1.png	Area Map	Major spawning locations for Atlantic Herring within the Gulf of Maine and southwestern Nova Scotia, pre-1980.	Georges Bank, Nantucket Shoals, Jeffrey's Ledge, Minas Basin	Sinclair et al. 1985.
Atlantic Herring	Larvae	Early Development	F175-200-4-sp.png	Area Map	Distribution of larval herring on Georges Bank and Nantucket Shoals, 1984.	Georges Bank, Scotian Shelf, Gulf of Maine	Lough et al. 1982
Atlantic Herring	Larvae	Early Development	F50-200-2-10.png	Contour Abundance	Distribution of Atlantic herring larvae in Gulf of Maine and Bay of Fundy, 1986.	Grand Manan, Bay of Fundy	Chenoweth et al. 1989
Atlantic Herring	Larvae	Early Development	F50-200-2-9a.png	Contour Abundance	Distribution of Atlantic herring larvae in Gulf of Maine and Bay of Fundy, 1986.	Grand Manan, Bay of Fundy	Chenoweth et al. 1989
Atlantic Herring	Larvae	Early Development	F50-200-2-9b.png	Contour Abundance	Distribution of Atlantic herring larvae in Gulf of Maine and Bay of Fundy, 1986.	Grand Manan, Bay of Fundy	Chenoweth et al. 1989
Atlantic Herring	Larvae	Early Development	F50-200-sp.png	Area Map	Station and spawning locations for a larval herring survey along the coast of eastern Maine and southwestern New Brunswick, 1986.	Grand Manan, Bay of Fundy	Chenoweth et al. 1989
Atlantic Herring	Adult	Spawning	F18-200-4-sp1.png	Area Map	Major spawning areas of Atlantic herring in the Gulf of St. Lawrence, 1985.	Gulf of St. Lawrence	Messieh 1988
Atlantic Herring	Larvae	Early Development	F142-200-2-13-3.png	Contour Abundance	Distribution and density of Atlantic herring on the southern coast of Nova Scotia, 1967-69.	Scotian Shelf	Sameoto 1972
Atlantic Herring	Adult	Spawning	F52-200-4-9-sp.png	Area Map	Spawning locations for Atlantic herring on Georges Bank, 1956-57.	Scotian Shelf (western), Georges Bank, Gulf of Maine, Great South Channel, Nantucket Shoals	Colton and Temple 1961
Atlantic Herring	Adult	Spawning	F4-200-4-sp1.png	Area Map	Major spawning locations for Atlantic herring on Georges Bank and neighboring areas, pre-1990.	Scotian Shelf, Georges Bank, Jeffreys Ledge	Stephenson and Kornfield 1990
Atlantic Herring	Adult	Spawning	F43-200-4-13-sp.png	Area Map	Spawning locations for Atlantic Herring in Eastern Canada, pre-1993.	Scotian Shelf, Gulf of Maine, Newfoundland Shelf, Gulf of St. Lawrence, Bay of Chaleur, Bras D'or Lakes, Minas Basin, Georges Bank	Stewart and Arnold 1994
Atlantic Herring	Adult	Spawning	F24-200-4-sp1.png	Area Map	Major spawning grounds of Atlantic herring in Atlantic Canada and coastal Maine, pre-1985.	US Northeast Atlantic Shelf, Newfoundland Shelf, Scotian Shelf, Bay of Fundy, Gulf of Maine, Gulf of St. Lawrence	Haegele and Schweigert 1985

Filename: Mapinfo files have the same identifier number.

Species	Stage	Activity	Filename	Map Type	Caption	Location	Reference
Atlantic Mackerel	Egg	Early Development	F87-250-4-5-sp.png	Contour Abundance	Distribution and abundance of Atlantic mackerel eggs in the Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.	Gulf of Maine, Western Scotian Shelf, Browns Bank	Berrien et al. 1981
Atlantic Mackerel	Egg	Early Development	F87-250-4-8-sp.png	Contour Abundance	Distribution and abundance of Yellowtail flounder eggs in the Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.	Southern New England Shelf	Berrien et al. 1981
Atlantic Mackerel	Egg	Early Development	F87-250-4-4-sp.png	Contour Abundance	Distribution and abundance of Atlantic mackerel eggs in the Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.	Southern New England Shelf, Middle Atlantic Bight	Berrien et al. 1981
Cusk Eel	Larvae	Early Development	F53-649-2-11.png	Contour Abundance	Distribution and abundance of Cusk eel larvae in the Middle Atlantic Bight, 1985.	Middle Atlantic Bight	Fahay 1992
Cusk Eel	Larvae	Early Development	F53-649-2-7.png	Contour Abundance	Distribution and abundance of Cusk eel larvae in the Middle Atlantic Bight, 1985.	Middle Atlantic Bight	Fahay 1992
Cusk Eel	Larvae	Early Development	F53-649-2-8.png	Contour Abundance	Distribution and abundance of Cusk eel larvae in the Middle Atlantic Bight, 1985.	Middle Atlantic Bight, Georges Bank, Southern New England	Fahay 1992
Cusk Eel	Larvae	Early Development	F53-649-2-10.png	Contour Abundance	Distribution and abundance of Cusk eel larvae in the Middle Atlantic Bight, 1985	Middle Atlantic Bight, Southern New England Shelf	Fahay 1992
Fish Unspecified	Larvae	Early Development	F39-larval diversity.png	Contour Abundance	Larval fish diversity on the Scotian Shelf, 2000.	Scotian Shelf	Breeze et al. 2002
Gadus morhua	Egg	Early Development	F55-100-1-fall.png	Contour Abundance	Distribution and concentration of Atlantic cod eggs on the Scotian Shelf and in the Gulf of Maine, 1979-1984.	Browns Bank, Western Bank, Sable Island Bank, Middle Bank, Banquereau Bank	Frank et al. 1994
Gadus morhua	Adult	Spawning	F155-100-4-sp.png	Area Map	Major spawning locations for Atlantic Cod on the Scotian Shelf, pre-1996.	Eastern Scotian Shelf (inshore), Canso Bank, Middle Bank, Banquereau Bank, Sable Island Bank, Emerald Bank	Sinclair 1996
Gadus morhua	Adult	Spawning	F33-100-4-13-sp.png	Area Map	Major Atlantic Cod spawning areas on the Scotian Shelf, pre-1997.	Emerald Bank, Sable Island Bank, Banquereau Bank, Middle Bank, Canso Bank	Sinclair MS
Gadus morhua	Egg	Early Development	F65-100-1-4.png	Contour Abundance	Distribution and abundance of Atlantic cod larvae on Georges Bank, 1981.	Georges Bank	Lough 1984
Gadus morhua	Larvae	Early Development	F65-100-2-5.png	Contour Abundance	Distribution and abundance of Atlantic cod larvae on Georges Bank, 1981.	Georges Bank	Lough 1984
Gadus morhua	Egg	Early Development	F55-100-1-spring.png	Contour Abundance	Distribution and concentration of Atlantic cod eggs on the Scotian Shelf and in the Gulf of Maine, 1979-1984.	Georges Bank, Browns Bank, Emerald Bank, Western Bank, Middle Bank, Sable Island Bank and Banquereau Bank	Frank et al. 1994
Gadus morhua	Egg	Early Development	F31-100-1-3-1-1982.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1982.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Egg	Early Development	F31-100-1-3-1-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Egg	Early Development	F31-100-1-3-3-1982.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1982.	US Northeast Atlantic Shelf	Lough et al. 1994

Filename: Mapinfo files have the same identifier number.

Species	Stage	Activity	Filename	Map Type	Caption	Location	Reference
Gadus morhua	Egg	Early Development	F31-100-1-3-3-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Egg	Early Development	F31-100-1-4-1-1982.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1982.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Egg	Early Development	F31-100-1-4-1-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Egg	Early Development	F31-100-1-4-3-1982.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1982.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Egg	Early Development	F31-100-1-4-3-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Egg	Early Development	F31-100-1-5-1-1982.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1982.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Egg	Early Development	F31-100-1-5-1-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Egg	Early Development	F31-100-1-5-3-1982.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1982.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Egg	Early Development	F31-100-1-5-3-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-3-1-1982.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1982.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-3-1-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-3-2-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-3-3-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-4-1-1982.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1982.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-4-1-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-4-2-1982.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1982.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-4-2-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-4-3-1982.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1982.	US Northeast Atlantic Shelf	Lough et al. 1994

Filename: Mapinfo files have the same identifier number.

Species	Stage	Activity	Filename	Map Type	Caption	Location	Reference
Gadus morhua	Larvae	Early Development	F31-100-2-4-3-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-5-1-1982.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1982.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-5-1-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-5-2-1982.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1982.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-5-2-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-5-3-1982.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1982.	US Northeast Atlantic Shelf	Lough et al. 1994
Gadus morhua	Larvae	Early Development	F31-100-2-5-3-1985.png	Contour Abundance	Distribution and abundance of Atlantic cod egg and larvae on Georges Bank, 1985.	US Northeast Atlantic Shelf	Lough et al. 1994
Haddock	Larvae	Early Development	F26-110-2-7a.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Cape Cod Bay	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-2a.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-2b.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-3a.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-7b.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank	Smith et al. 1985
Haddock	Egg	Early Development	F65-110-1-4.png	Contour Abundance	Distribution and abundance of Haddock larvae on Georges Bank, 1981.	Georges Bank	Lough 1984
Haddock	Larvae	Early Development	F65-110-2-5.png	Contour Abundance	Distribution and abundance of Haddock larvae on Georges Bank, 1981.	Georges Bank	Lough 1984
Haddock	Adult	Spawning	F65-110-4-sp.png	Contour Abundance	Major spawning locations for Haddock on Georges Bank and neighboring areas, pre-1984.	Georges Bank	Lough 1984
Haddock	Egg	Early Development	F26-110-1-3.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1979-80.	Georges Bank, Cape Cod Bay	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-7c.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank, Cape Cod Bay	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-3a.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank, Southern New England Shelf	Smith et al. 1985

Filename: Mapinfo files have the same identifier number.

Species	Stage	Activity	Filename	Map Type	Caption	Location	Reference
Haddock	Larvae	Early Development	F26-110-2-3b.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank, Southern New England Shelf	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-3c.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank, Southern New England Shelf	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-4a.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank, Southern New England Shelf	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-4b.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank, Southern New England Shelf	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-4c.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank, Southern New England Shelf	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-5c.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank, Southern New England Shelf	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-6a.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank, Southern New England Shelf	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-6b.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank, Southern New England Shelf, Middle Atlantic Bight	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-6c.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank, Southern New England Shelf, Middle Atlantic Bight	Smith et al. 1985
Haddock	Egg	Early Development	F26-110-1-4.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1979-80.	Georges Bank, Southern New England Shelf, Scotian Shelf	Smith et al. 1985
Haddock	Egg	Early Development	F26-110-1-5.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1979-80.	Georges Bank, Southern New England Shelf, Scotian Shelf	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-5a.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank, Southern New England Shelf, Scotian Shelf	Smith et al. 1985
Haddock	Larvae	Early Development	F26-110-2-5b.png	Contour Abundance	Distribution and larval abundance of Haddock on the US Northeastern Atlantic Shelf, 1977-82.	Georges Bank, Southern New England Shelf, Scotian Shelf	Smith et al. 1985
Haddock	Adult	Spawning	F82-110-4-sp.png	Area Map	Major spawning ground locations of Atlantic haddock on Georges Bank and the Scotian Shelf and in the Gulf of Maine, pre-1989.	Gulf of Maine, Georges Bank, Browns Bank, Sable-Emerald Bank, St. Pierre Bank, Southern Grand Bank	Page and Frank 1989
Haddock	Adult	Spawning	F52-110-4-4-sp1.png	Area Map	Spawning locations for Haddock on Georges Bank, 1953.	Scotian Shelf (western), Georges Bank, Gulf of Maine, Great South Channel, Nantucket Shoals	Colton and Temple 1961
Haddock	Adult	Spawning	F52-110-4-4-sp2.png	Area Map	Spawning locations for Haddock on Georges Bank, 1955.	Scotian Shelf (western), Georges Bank, Gulf of Maine, Great South Channel, Nantucket Shoals	Colton and Temple 1961
Haddock	Adult	Spawning	F52-110-4-4-sp3.png	Area Map	Spawning locations for Haddock on Georges Bank, 1956.	Scotian Shelf (western), Georges Bank, Gulf of Maine, Great South Channel, Nantucket Shoals	Colton and Temple 1961

Filename: Mapinfo files have the same identifier number.

Species	Stage	Activity	Filename	Map Type	Caption	Location	Reference
Haddock	Adult	Spawning	F52-110-4-4-sp4.png	Area Map	Spawning locations for Haddock on Georges Bank, 1957.	Scotian Shelf (western), Georges Bank, Gulf of Maine, Great South Channel, Nantucket Shoals	Colton and Temple 1961
Pollock	Larvae	Early Development	F143-170-2-3.png	Contour Abundance	Distribution of pollock larvae in the Bay of Fundy, 1979.	Bay of Fundy	Scott 1980
Sand Lance	Larvae	Early Development	F143-178-2-3.png	Contour Abundance	Distribution of sand lance larvae in the Bay of Fundy, 1979.	Bay of Fundy	Scott 1980
Sand Lance	Adult, Larvae	Spawning, Early Development	F134-178-2-12-1974.png	Contour Abundance	Distribution and abundance of sand lance on the US Northeast Atlantic Shelf, 1974.	Georges Bank	Sherman et al. 1981
Sand Lance	Adult, Larvae	Spawning, Early Development	F134-178-2-12-1975.png	Contour Abundance	Distribution and abundance of sand lance on the US Northeast Atlantic Shelf, 1975.	Georges Bank	Sherman et al. 1981
Sand Lance	Adult, Larvae	Spawning, Early Development	F134-178-2-12-1976.png	Contour Abundance	Distribution and abundance of sand lance on the US Northeast Atlantic Shelf, 1976.	Georges Bank	Sherman et al. 1981
Sand Lance	Adult, Larvae	Spawning, Early Development	F134-178-2-12-1977.png	Contour Abundance	Distribution and abundance of sand lance on the US Northeast Atlantic Shelf, 1977.	Georges Bank	Sherman et al. 1981
Sand Lance	Adult, Larvae	Spawning, Early Development	F134-178-2-12-1978.png	Contour Abundance	Distribution and abundance of sand lance on the US Northeast Atlantic Shelf, 1978.	Georges Bank	Sherman et al. 1981
Sand Lance	Adult, Larvae	Spawning, Early Development	F134-178-2-12-1979.png	Contour Abundance	Distribution and abundance of sand lance on the US Northeast Atlantic Shelf, 1979.	Georges Bank	Sherman et al. 1981
Short-finned Squid	Larvae	Early Development	F42-615-2-13.png	Area Map	Larval migration of short-finned squid from the edge of the Continental Slope onto the Grand Banks, the Scotian Shelf, Georges Bank and mid-Atlantic Bight shelf area, pre-1989.	Emerald Bank, LaHave Banks, Georges Bank, Grand Banks, Scotian Shelf	Underwater World 1989
Silver Hake	Adult	Spawning	F139-172-4-sp.png	Area Map	Distribution of silver hake on the Scotian Shelf, pre-1993.	Banquereau Bank, Browns Bank, Emerald Bank, Sable Island Bank (western), Western Bank, Middle Bank	Rikhter et al. 2001
Silver Hake	Egg	Early Development	F89-172-4-11-sp.png	Contour Abundance	Distribution and abundance of Silver hake eggs in the Gulf of Maine and on the US Northeastern Atlantic Shelf, 1979.	Georges Bank	Berrien 1983
Silver Hake	Egg	Early Development	F89-172-4-8-sp.png	Contour Abundance	Distribution and abundance of Silver hake eggs in the Gulf of Maine and on the US Northeastern Atlantic Shelf, 1979.	Georges Bank, Gulf of Maine, Southern New England Shelf, Middle Atlantic Bight	Berrien 1983
Silver Hake	Egg	Early Development	F89-172-4-5-sp.png	Contour Abundance	Distribution and abundance of Silver hake eggs in the Gulf of Maine and on the US Northeastern Atlantic Shelf, 1979.	Georges Bank, Gulf of Maine, Western Scotian Shelf, Southwest Nova Scotia Shelf,Southern New England Shelf, Middle Atlantic Bight	Berrien 1983
Silver Hake	Egg	Early Development	F89-172-4-6-sp.png	Contour Abundance	Distribution and abundance of Silver hake eggs in the Gulf of Maine and on the US Northeastern Atlantic Shelf, 1979.	Georges Bank, Gulf of Maine, Western Scotian Shelf, Southwest Nova Scotia Shelf,Southern New England Shelf, Middle Atlantic Bight	Berrien 1983
Silver Hake	Egg	Early Development	F89-172-4-4-sp.png	Contour Abundance	Distribution and abundance of Silver hake eggs in the Gulf of Maine and on the US Northeastern Atlantic Shelf, 1979.	Georges Bank, Southern New England Shelf	Berrien 1983

Filename: Mapinfo files have the same identifier number.

Species	Stage	Activity	Filename	Map Type	Caption	Location	Reference
Silver Hake	Egg	Early Development	F89-172-4-10-sp.png	Contour Abundance	Distribution and abundance of Silver hake eggs in the Gulf of Maine and on the US Northeastern Atlantic Shelf, 1979.	Georges Bank,Gulf of Maine, Southern New England Shelf, Middle Atlantic Bight	Berrien 1983
Silver Hake	Egg	Early Development	F7-172-1-08.png	Contour Abundance	Shaded contour plot of silver hake egg abundance on the Scotian Shelf, August 1979.	Scotian Shelf	O'Boyle et al. 1984
Silver Hake	Egg	Early Development	F7-172-1-09.png	Contour Abundance	Shaded contour plot of silver hake egg abundance on the Scotian Shelf, Sept. 1979.	Scotian Shelf	O'Boyle et al. 1984
Silver Hake	Larvae	Early Development	F7-172-2-08.png	Contour Abundance	Shaded contour plot of silver hake larval abundance on the Scotian Shelf, August 1979.	Scotian Shelf	O'Boyle et al. 1984
Silver Hake	Larvae	Early Development	F7-172-2-09.png	Contour Abundance	Shaded contour plot of silver hake larval abundance on the Scotian Shelf, Sept.1979.	Scotian Shelf	O'Boyle et al. 1984
Witch Flounder	Adult	Spawning	F179-142-4-sp.png	Area Map	Major spawning grounds for Witch flounder on Newfoundland, Labrador, US Northeast Atlantic and Scotian Shelves, 1959-1970.	Grand Banks, Georges Bank, Labrador Shelf, Scotian Shelf	Evseenko and Nevinsky 1975
Witch Flounder	Egg, Larvae	Early Development	F179-142-1-5.png	Contour Abundance	Distribution and abundance of Witch flounder larvae on Newfoundland, Labrador, US Northeast Atlantic and Scotian Shelves, 1959-1970.	US Northeast Atlantic Shelf, Newfoundland Shelf, Labrador Shelf, Scotian Shelf, Gulf of Maine	Evseenko and Nevinsky 1975
Witch Flounder	Egg	Early Development	F179-142-1-6.png	Contour Abundance	Distribution and abundance of Witch flounder eggs on Newfoundland, Labrador, US Northeast Atlantic and Scotian Shelves, 1959-1970.	US Northeast Atlantic Shelf, Newfoundland Shelf, Labrador Shelf, Scotian Shelf, Gulf of Maine	Evseenko and Nevinsky 1975
Witch Flounder	Egg, Larvae	Early Development	F179-142-1-7.png	Contour Abundance	Distribution and abundance of Witch flounder larvae on Newfoundland and Scotian Shelves, 1959-1970.	US Northeast Atlantic Shelf, Newfoundland Shelf, Labrador Shelf, Scotian Shelf, Gulf of Maine	Evseenko and Nevinsky 1975
Witch Flounder	Egg, Larvae	Early Development	F179-142-1-8.png	Contour Abundance	Distribution and abundance of Witch flounder larvae on Nwfoundland, Labrador and Scotian Shelves, 1959-1970.	US Northeast Atlantic Shelf, Newfoundland Shelf, Labrador Shelf, Scotian Shelf, Gulf of Maine	Evseenko and Nevinsky 1975
Yellowtail Flounder	Egg	Early Development	F48-141-1-3.png	Contour Abundance	Distribution of Yellowtail flounder eggs in Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.	Georges Bank, Southern New England Shelf, Middle Atlantic Bight	Berrien 1981
Yellowtail Flounder	Egg	Early Development	F48-141-1-6a.png	Contour Abundance	Distribution of Yellowtail flounder eggs in Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.	Georges Bank, Southern New England Shelf, Middle Atlantic Bight	Berrien 1981
Yellowtail Flounder	Egg	Early Development	F48-141-1-5a.png	Contour Abundance	Distribution of Yellowtail flounder eggs in Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.	Georges Bank, Southern New England Shelf, Middle Atlantic Bight, Gulf of Maine	Berrien 1981
Yellowtail Flounder	Egg	Early Development	F88-141-4-8-sp.png	Contour Abundance	Distribution and abundance of Silver hake eggs in the Gulf of Maine and on the US Northeastern Atlantic Shelf, 1979.	Gulf of Maine, Georges Bank, Southern New England Shelf	Berrien 1981
Yellowtail Flounder	Egg	Early Development	F48-141-1-4.png	Contour Abundance	Distribution of Yellowtail flounder eggs in Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.	Southern New England Shelf	Berrien 1981
Yellowtail Flounder	Egg	Early Development	F88-141-4-3-sp.png	Contour Abundance	Distribution and abundance of Yellowtail flounder eggs in the Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.	Southern New England Shelf, Georges Bank, Middle Atlantic Bight	Berrien 1981

Filename: Mapinfo files have the same identifier number.

Species	Stage	Activity	Filename	Map Type	Caption	Location	Reference
Yellowtail Flounder	Egg	Early Development	F88-141-4-5-sp.png	Contour Abundance	Distribution and abundance of Yellowtail flounder eggs in the Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.	Southern New England Shelf, Georges Bank, Western Scotian Shelf, Browns Bank, Southwest Nova Scotia Shelf, Northeast Channel	Berrien 1981
Yellowtail Flounder	Egg	Early Development	F88-141-4-4-sp.png	Contour Abundance	Distribution and abundance of Yellowtail flounder eggs in the Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.	Southern New England Shelf, Georges Bank, Western Scotian Shelf, Browns Bank, SW Nova Scotia Shelf, N Channel,Middle Atlantic Bight, Gulf of Maine	Berrien 1981
Yellowtail Flounder	Egg	Early Development	F48-141-1-5b.png	Contour Abundance	Distribution of Yellowtail flounder eggs in Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.	Southern New England Shelf, Middle Atlantic Bight	Berrien 1981
Yellowtail Flounder	Egg	Early Development	F48-141-1-5b.png	Contour Abundance	Distribution of Yellowtail flounder eggs in Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.Distribution of Yellowtail flounder eggs in Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.	Southern New England Shelf, Middle Atlantic Bight	Berrien 1981
Yellowtail Flounder	Egg	Early Development	F48-141-1-6b.png	Contour Abundance	Distribution of Yellowtail flounder eggs in Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.	Southern New England Shelf, Middle Atlantic Bight	Berrien 1981
Yellowtail Flounder	Egg	Early Development	F48-141-1-8.png	Contour Abundance	Distribution of Yellowtail flounder eggs in Gulf of Maine and on the US Northeastern Atlantic Shelf, 1977.	Southern New England Shelf, Middle Atlantic Bight, Gulf of Maine, Georges Bank	Berrien 1981

Filename: Mapinfo files have the same identifier number.

APPENDIX I — REFERENCE DOCUMENTS FOR EAISSNA.

Appendix I - Reference documents for EAISSNA.

Reference Number	Reference
F 1	Hardy Associates Ltd. 1985. The method for environmental impact assessment: Hibernia Project. Report prepared for Mobil Oil Canada Ltd.
F 2	Pottle, R.A., P.A. MacPherson, S.N. Messieh and D.S. Moore. 1981. A SCUBA survey of a herring (Clupea harengus L.) spawning bed in Miramichi Bay, N.B.. Can. Tech. Rep. Fish. Aquat. Sci. 984.
F 3	Halliday, R.G., McGlade, J., Mohn, R., O'Boyle, R.N. and Sinclair, M. 1986. Resource and fishery distributions in the Gulf of Maine area in relation to the subarea 4/5 boundary. NAFO Sci. Coun. Studies 10:67-92.
F 4	Stephenson, R.L. and Kornfield, I. 1990. Reappearance of spawning Atlantic herring (Clupea harengus harengus on Georges Bank: population resurgence not recolonization. Can. J. Fish. Aquat. Sci. 47(6):1060-1064.
F 5	Bradford, R.G. and Iles, T.D. 1992. Unique biological characteristics of spring-spawning herring (Clupea harengu L.) in Minas Basin, Nova Scotia, a tidally dynamic environment. Can. J. Zool. 70: 641-648.
F 6	Tremblay, M.J. and M. Sinclair 1992. Planktonic sea scallop larvae (Placopecten magellanicus) in the Georges Bank Region: broadscale distribution in relation to physical oceanography. Can. J. Fish. Aquat. Sci. 49: 1597-1615.
F 7	O'Boyle, R.N., M. Sinclair, R.J. Conover, K.H. Mann, and A.C. Kohler. 1984. Temporal and spatial distribution o icthyoplankton communities of the Scotian Shelf in relation to biological, hydrological,and physiographic features. Rapp. P.-v Reun. Cons. int. Explor. Mer 183: 27-40.
F 8	Sinclair, M., and T.D. Iles. 1985. Atlantic herring (C. harengus) distributions in the Gulf of Maine-Scotian Shelf area in relation to oceanographic features. Can. J. Fish. Aquat. Sci. 42:880-887.
F 9	McQuinn, I.H., G.J. Fitzgerald and H. Powles. 1983. Environmental effects on embryos and larvae of the Isle of Verte stock of Atlantic herring (C. harengus). J. Ecol. Syst. 110:343-355.
F 10	Tremblay, M.J. and M.M. Sinclair. 1986. The horizontal distribution of larval sea scallops (Placopecten magellanicus) in the Bay of Fundy, on the Scotian Shelf and on Georges Bank. NAFO SCR Doc. 86/98.
F 11	Tremblay, M.J. and M. Sinclair. 1990. Sea scallop larvae Placopecten magellanicus on Georges Bank: vertical distribution in relation to water column stratification and food. Mar. Ecol. Prog. Ser. 61: 1-15.
F 12	Hutchings, J.A., R.A. Myers, and G.R. Lilly. 1993. Geographic variation in the spawning of Atlantic cod, Gadus morhua, in the Northwest Atlantic. Can. J. Fish. Aquat. Sci. 50: 2457-2467.
F 13	Tremblay, M.J., and M. Sinclair. 1990. Diel vertical migration of sea scallop larvae Placopecten magellanicus in a shallow embayment. Mar. Ecol. Prog. Ser. 67: 19-25.
F 14	McQuinn, I.H. 1989. Identification of spring- and autumn-spawning herring (Clupea harengus harengus) using maturity stages assigned from a gonadosomatic index model. Can. J. Fish. Aquat. Sci. 46: 969-980.
F 15	Fortier, L., and W.C. Leggett. 1984. Small-scale covariability in the abundance of fish larvae and their prey. Can. J. Fish. Aquat. Sci. 41: 502-512.
F 16	Sinclair, M. and M.J. Tremblay. 1984. Timing of spawning of Atlantic herring (Clupea harengus harengus) populations and the match-mismatch theory. Can. J. Fish. Aquat. Sci. 41: 1055-1065.
F 17	Lambert, T.C., and S.N. Messieh. 1989. Spawning dynamics of Gulf of St. Lawrence herring (Clupea harengus). Can. J. Fish. Aquat. Sci. 46: 2085-2094.
F 18	Messieh, S. 1988. Spawning of Atlantic herring in the Gulf of St. Lawrence. Am. Fish. Soc. Symposium 5: 31-48.

Reference Number	Reference
F 19	Messieh, S.N., and H. Rosenthal. 1989. Mass mortality of herring eggs on spawning beds on and near Fisherman's Bank, Gulf of St. Lawrence, Canada. Aquat. Living Resour. 2: 1-8.
F 20	Courtois, R., M. Simoneau et J.J. Dodson. 1982. Interactions multispecifiques: repartition spatio-temporelle des larves de capelan (Mallotus vollosus), d'eperlan (Osmerus mordax) et de hareng de l'Atlantique (Clupea harengus harengus) au sein de la communaute planktonique de l'estuaire moyen du Saint-Laurent. Can. J. Fish. Aquat. Sci. 39: 1164-1174.
F 21	Davidson, L.-A., M. Lanteigne and M. Niles. 1993. Timing of the gametogenic development and spawning period of the giant scallop Placopecten magellanicus (Gmelin) in the southern Gulf of St. Lawrence. Can Tech. Rep. Fish Aquat. Sci. 1935: 14 p.
F 22	DeLafontaine, Y., M. Sinclair, S.N. Messieh, M.I. El-Sabh, and C. Lassus. 1981. Ichthyoplankton distributions in the northwestern Gulf of St. Lawrence. Rapp. P.-v. Reun. Cons. int. Explor. Mer 178: 185-187.
F 23	Messieh, S.N. 1987. Some characteristics of Atlantic herring (Clupea harengus) spawning in the southern Gulf of St. Lawrence. NAFO Sci. Coun. Studies 11: 53-61
F 24	Haegele, C.W., and J.F. Schweigert. 1985. Distribution and characteristics of herring spawning grounds and description of spawning behavior. Can. J. Fish. Aquat. Sci. 42 (Suppl. 1): 39-55.
F 25	Halliday, R.G. 1991. Marine distribution of the sea lamprey (Petromyzon marinus) in the northwest Atlantic. Can. J. Fish. Aquat. Sci. 48: 832-842.
F 26	Smith, W.G. and W.W. Morse. 1985. Retention of larval haddock Melanogrammus aeglefinus in the Georges Bank region, a gyre-influenced spawning area. Mar. Ecol. Prog. Ser. Vol. 24:1-13.
F 27	Roff, J.C., L.P. Fanning, and A.B. Stasko. 1986. Distribution and association of larval crabs (Decapoda: Brachyura) on the Scotian Shelf. Can. J. Fish. Aquat. Sci. 43: 587-599
F 28	Harris, L.E. and R.L. Stephenson. 1999. Compilation of available information regarding the Scotian Shelf herring spawning component. Canadian Stock Assessment Research Document, 99/181.
F 29	Mobil Oil Canada Ltd. 1983. Venture Development Project Environmental Impact Statement. Biophysical Assessment. Volume IIIa, 415 p.
F 30	Werner, F.E., F.H. Page, D.R. Lynch, J.W. Loder, R.G. Lough, R.I. Perry, D.A. Greenberg and M.M. Sinclair. 1993. Influences of mean advection and simple behavior on the distribution of cod and haddock early life stages on Georges Bank. Fish. Oceanogr. 2: 43-64
F 31	Lough, R.G., W.G. Smith, F.E. Werner, J.W. Loder, F.H. Page, C.G. Hannah, C.E. Naimie, R.I. Perry, M. Sinclai and D.R. Lynch. 1994. Influence of wind-driven advection on interannual variability in cod egg and larval distributions on Georges Bank: 1982 vs 1985. ICES mar Sci. Symposium 198: 356-378.
F 32	Davis, R. A., D. H. Thomson, C. I. Malme. 1998. Environmental Assessment of Seismic Exploration on the Scotian Shelf. Report to Mobil Oil Canada Properties Ltd., Shell Canada Ltd., Imperial Oil Ltd.. LGL Limited, King City, Ontario.
F 33	Sinclair, M. MS. 1993. Recent Advances and Problems in Fisheries Science. Unpublished MS, Fisheries and Oceans Canada.
F 34	Lough, R. G., et al. 1989. Ecology and distribution of juvenile cod and haddock in relation to sediment type and bottom currents on eastern Georges Bank. Marine Ecology Progress Series, Vol. 56, pp. 3-12.
F 35	Brander, K. and P.C.F. Hurley, 1992. Distribution of early-stage Atlantic cod (Gadus morhua), haddock (Melanogrammus aeglefinus) and witch flounder (Glyptocephalus cynoglossus) eggs on the Scotian Shelf: a reappraisal of evidence on the coupling of cod spawning and plankton production. Can. J. Fish. Aquat. Sci. 49: 238-251.

Reference Number	Reference
F 36	Taggart, C. T., K. R. Thompson, G. L. Maillet, S. E. Lochmann, D. A. Griffin. 1996. Abundance distribution of larval cod (Gadus morhua) and zooplankton in a gyre-like water mass on the Scotian Shelf. In, Y. Watanabe, Y. Yamashita and Y. Oozeki (eds.), Survival Strategies in Early Life Stages of Marine Resources. Proceedings of an International Workshop, 11-14 October 1994, Yokohama, Japan. A. A. Balkema, Rotterdam, Brookfield, Vermont, 350 p.
F 37	Robichaud, D. and G.A. Rose. 2001. Multiyear homing of Atlantic cod to a spawning ground. Can. J. Fish. Aquat. Sci. 58: 2325-2329.
F 38	Fahay, M.P and Able, K.W. 1989. White hake, Urophycis tenuis, in the Gulf of Maine: spawning seasonality, habitat use, and growth in young of the year and relationships to the Scotian Shelf population. Can. J. Zool. 67: 1715-1724.
F 39	Breeze, H., D.G. Fenton, R.J. Rutherford, and M.A. Silva. 2002. The Scotian Shelf: an ecological overview for ocean planning. Can. Tech. Rep. Fish. Aquat. Sci. 2393: x + 259 pp.
F 40	Melvin, G.D., F.J. Fife, M.J. Power and R.L. Stephenson. 1996. The review of Georges Bank (5Z) Herring Stock. DFO Atlantic Fisheries Research Document 96/29
F 41	Beanlands, D. and C. Annand. 1996. The status of monkfish in 4VWX5Zc. DFO Atlantic Fisheries Research Document 96/104.
F 42	Underwater world 1989. Squid. Communications Directorate, DFO.
F 43	Stewart, P.L., and S.H. Arnold. 1994. Environmental Requirements Atlantic Herring (Clupea harengus harengus) in Eastern Canada and Its Response to Human Impacts. Can. Tech. Rep. Fish. Aquat. Sci. 2003: 37 p.
F 44	Smith, P.C., P.C.F. Hurley, K.T. Frank, S.E. Campana, P.A. Koeller, R.I. Perry and R.N. O'Boyle. 1991. The Fisheries Ecology Program. In, The Science Review of the Bedford Institute of Oceanography, the Halifax Fisheries Research Laboratory, and the St. Andrews Biological Station. 1988 & 89. Scotia-Fundy Region of DFO.
F 45	Loder, J.W., R.I. Perry, K.F. Drinkwater, J.Grant, G.C. Harding, W.G. Harrison, E.P.W. Horne, N.S. Oakey, C.T. Taggart, M.J. Tremblay, D. Brickman and M.M Sinclair. 1992. Physics and biology of the Georges Bank frontal system. Pages 57-61 In, The Science Review.of the Bedford Institute of Oceanography, the Halifax Fisheries Research Laboratory, and the St. Andrews Biological Station. 1990 & 91. Scotia-Fundy Region of DFO.
F 46	Comeau, L.A., S.E. Campana and M. Castonguay. 2002. Automated monitoring of a large-scale cod (Gadus morhua) migration in the open sea. Can. J. Fish. Aquat. Sci. 59: 1845-1850.
F 47	Arocha, F. and Lee D.W. 1996. Maturity at size, reproductive seasonality, spawning frequency, fecundity and sex ratio in swordfish from the Northwest Atlantic (SCR/95/98). Collective volume of scientific papers. ICCAT: 45(2): 350-357.
F 48	Berrien, P. 1981. Yellowtail flounder, Limanda ferruginea, estimates of egg abundance and population size during spring 1977 in Gulf of Maine, Georges Bank, Southern New England and Middle Atlantic Bight waters. ICES CM G:65
F 49	Campana, S.E., K.T. Frank, P.C.F. Hurley, P.A. Koeller, F.H. Page, and P.C. Smith. 1989. Survival and abundance of young Atlantic cod (Gadus morhua) and haddock (Melanogrammus aeglefinus) as indicators of year-class strength. Can. J. Fish. Aquat. Sci. 46 (Suppl.1): 171-182.
F 50	Chenoweth, S.B., D.A. Libby, R.L. Stephenson and M.J. Power. 1989. Origin and dispersion of larval herring (Clupea harengus) in coastal waters of Eastern Maine and Southwestern New Brunswick. Can. J. Fish. Aquat. Sci. 46: 624-632.
F 51	Colton, J.B., W.G. Smith, A.W. Kendall, Jr., P.L. Berrien and M.P. Fahay. 1979. Principal spawning areas and times of marine fishes, Cape Sable to Cape Hatteras. Fishery Bulletin 76 (4): 911-915.

Reference Number	Reference
F 52	Colton, J.B. and R.F. Temple. 1961. The Enigma of Georges Bank spawning. Limnol.Ocanogr. 6: 280-291.
F 53	Fahay, M.P. 1992. Development and distribution of cusk eel eggs and larvae in the Middle Atlantic Bight with a description of Ophidion robinsi n. sp. (Teleostei: Ophidiidae). Copeia 3: 799-819
F 54	Flierl, G.R. and J.S. Wroblewski. 1985. The possible influence of warm core gulf stream rings upon shelf water larval fish distribution. Fishery Bulletin 83(3):313-330.
F 55	Frank, K.T., K..F. Drinkwater and F.H. Page. 1994. Possible causes of recent trends and fluctuations in Scotian shelf/gulf of Maine cod stocks. ICES mar.Sci. Symp., 198: 110-120.
F 56	Garrison, L.P., W. Michaels, J.S. Link and M.J. Fogarty. 2000. Predation risk on larval gadids by pelagic fish in the Georges Bank ecosystem. I. Spatial overlap associated with hydrographic features. Can. J. Fish. Aquat. Sci. 57 2455-2469.
F 57	Hurley, P.C.F. and S.E. Campana. 1989. Distribution and abundance of haddock (Melanogrammus aeglefinus) an Atlantic cod (Gadus morhua) eggs and larvae in the waters off southwest Nova Scotia. Can. J. Fish. Aquat. Sci. 46 (Suppl. 1): 103-112
F 58	Keats, D.W., G.R. South and D.H. Steele. 1985. Reproduction and egg guarding by Atlantic wolffish (Anarhichas lupus:Anarhichidae) and ocean pout (Macrozoarces americanus: Zoarchidae) in Newfoundland waters. Can. J. Zool. 63: 2565-2568.
F 59	Kleckner, R.C., J.D. McCleave. 1985. Spatial and temporal distribution of American eel larvae in relation to Nort Atlantic Ocean current systems. Dana, 4: 67-92.
F 60	Kleckner, R.C. and J.D. McCleave. 1980. Spatial and temporal distribution of Anguilla rostrata and Anguilla anguilla leptocephali found in North American ichthyoplankton collections. ICES CM M: 21
F 61	Krouse, J.S. 1972. Some life history aspects of the rock crab, Cancer irroratus, in the Gulf of Maine. J. Fish. Res. Bd. Canada 29: 1479-1482.
F 62	Kynard, B. 1997. Life history, latitudinal patterns, and status of the shortnose sturgeon, Acipenser brevirostrum. Environmental Biology of Fishes 48: 319-334.
F 63	Kynard, B. and M. Horgan. 2002. Ontogenetic behavior and migration of Atlantic sturgeon, Acipenser oxyrinchus oxyrinchus, and shortnose sturgeon, A. brevirostrum, with notes on social behavior. Environmental biology of fishes 63: 137-150.
F 64	Lazzari, M.A. 2001. Dynamics of larval fish abundance in Penobscot Bay, Maine. Fish. Bull. 99: 81-93.
F 65	Lough, R.G. 1984. Larval fish trophodynamic studies on Georges Bank: sampling strategy and initial results. Flodevigen rapportser 1: 395-435.
F 66	Lough, R.G. and G.R. Bolz. 1989. The movement of cod and haddock larvae onto the shoals of Georges Bank. J. Fish. Biol. 35(supplement A): 71-79.
F 67	Lough, R.G., E.M. Caldarone, T.K. Rotunno, E.A. Broughton, B.R. Burns and L.J. Buckley. 1996. Vertical distribution of cod and haddock eggs and larvae, feeding and condition in stratified and mixed waters on southern Georges Bank, May 1992. Deep-Sea Reaserch II, 43: 1875-1904.
F 68	Lough, R.G. and D.C. Potter. 1993. Vertical distribution patterns and diel migrations of larval and juvenile haddock Melanogrammus aeglefinus and Atlantic cod Gadus morhua on Georges Bank. Fish. Bul. 91: 281-303.
F 69	Lutcavage, M.E., R.W. Brill, G.B. Skomal, B.C. Chase and P.W. Howey. 1999. Results of pop-up satellite tagging of spawning size class fish in the Gulf of Maine: do North Atlantic bluefin tuna spawn in the mid-Atlantic? Can. J Fish. Aquat. Sci. 56: 173-17 7.

Reference Number	Reference
F 70	Markle, D.F. and L-A. Frost. 1984. Comparative morphoplogy, seasonality, and a key to planktonic fish eggs from the Scotian shelf. Can. J. Zool. 63: 246-257.
F 71	Markle, D.F., D.A. Methven and L.J. Coates-Markle. 1982. Aspects of spatial and temporal coocurrence in the life history stages of the sibling hakes, Urophycis chuss (Walbaum 1972) and Urophycis tenuis (Mitchill 1815) (Pisces: Gadidae). Can. J. Zool. 60: 2057-2078.
F 72	Matthiessen, G.C.1984. The seasonal occurrence and distribution of larval lobsters in Cape Cod Bay. In Lecture notes on coastal and estuarine studies. J.D. Davis and D. Merriman (eds).
F 73	McLaren, I.A., P. Avendano, C.T. Taggart and S.E. Lochmann. 1997. Feeding by larval cod in different water-masses on Western Bank, Scotian Shelf. Fish. Oceanogr. 6(4): 250-265.
F 74	Meekan, M.G. and L. Fortier. 1996. Selection for fast growth during the larval life of Atlantic cod Gadus morhua on the Scotian Shelf. Mar. Ecol. Prog. Ser. 137: 25-37.
F 75	Messieh, S.N. and R.A. Pottle. 1986. Distribution of gillnets and spring spawning grounds of Atlantic herring in the southern Gulf of St. Lawrence as inferred from aerial surveys. Can. Tech. Rep. Fish. Aquat. Sci. No. 1504.
F 76	Meyer, T.L., R.A. Cooper and R.W. Langton. 1979. Relative abundance, behaviour, and food habits of the American sand lance, Ammodytes americanus, from the Gulf of Maine. Fishery Bulletin 77(1): 243-253.
F 77	Morgan, M.J. and E.A. Trippel. 1996. Skewed sex ratios in spawning shoals of Atlantic cod (Gadus morhua). ICES J. Mar. Sci. 53: 820-826.
F 78	Neilson, J.D., E.M. DeBlois and P.C.F. Hurley. 1988. Stock structure of Scotian Shelf flatfish as inferred from ichthyoplankton survey data and the geographic distribution of mature females. Can. J. Fish. Aquat. Sci. 45: 1674-1685.
F 79	Nevinsky, M.M and V.P. Serebryakov. 1973. American plaice, Hippoglossoides platessoides Fabr., spawning in the Northwest Atlantic area. ICNAF Research Bulletin 10: 23-36.
F 80	Ni, I-H. and W. Templeman 1985. Reproductive cycles of redfishes (Sebastes) in southern Newfoundland waters. J. Northw. Atl. Fish. Sci. 6: 57-63.
F 81	Page, F.H., K.T. Frank and K.R. Thompson. 1989. Stage dependant vertical distribution of haddock (Melanogrammus aeglefinus) eggs in a stratified water column: observations and model. Can. J. Fish. Aquat. Sci. 46 (Suppl. 1): 55-67.
F 82	Page, F.H. and K.T. Frank. 1989. Spawning time and egg stage duration in northwest Atlantic haddock (Melanogrammus aeglefinus) stocks with emphasis on Georges Bank and Browns Bank. Can. J. Fish. Aquat. Sci. 46 (Suppl. 1): 68-81.
F 83	Page, F.H., M. Sinclair, C.E. Naimie, J.W. Loder, R.J. Losier, P.L. Berrien and R.G. Lough. 1999. Cod and haddock spawning on Georges Bank in relation to water residence times. Fish. Oceanogr. 8(3): 212-226.
F 84	Graham, J., S. Engle and M. Recchia. 2002. Local knowledge and local stocks: an atlas of groundfish spawning in the Bay of Fundy. The Centre for community-based management. St. Francis Xavier University, Antigonish, Nova Scotia. 63 p.
F 85	Black, G.A.P., T.W. Rowell and E.G. Dawe. 1987. Atlas of the biology and distribution of the squids Illex illecebrosus and Loligo pealei in the Northwest Atlantic, Can. Spec. Publ. Fish. Aquat. Sci. 100: 62p.
F 86	Morse, W.W., M.P. Fahay and W.G. Smith. 1987. MARMAP surveys of the continental shelf from Cape Hatteras, North Carolina, to Cape Sable, Nova Scotia (1977-1984). Atlas No. 2. Annual distribution patterns of fish larvae. NOAA Tech. Memo. NMFS-F/NEC-47.

Reference Number	Reference
F 87	Berrien, P.L, N.A. Naplin and M.R. Pennington. 1981. Atlantic mackerel, Scomber scombrus, egg production and spawning population estimates for 1977 in the Gulf of Maine, Georges Bank, and Middle Atlantic Bight. Rapp. P.-v. Reun. Cons. Int. Explor. Mer. 178: 279-288.
F 88	Smith, W.G. and W.W. Morse. 1990. Larval distribution patterns: evidence for the collapse/recolonization of Atlantic herring on Georges Bank. ICES C.M. 1990/M:17. 16 p.
F 89	Berrien, P. 1983. Silver hake, Merluccius bilinearis, egg census and adult population estimate for 1979 in waters off eastern United States. ICES CM G:46.
F 90	Anderson, J.T. and E.L. Dalley. 1995. Spawning and recruitment of northern cod as measured by pelagic juvenile cod surveys following stock collapse, 1991-94. DFO Atlantic Fisheries Research Document 95/89.
F 91	Anderson, J.T. and E.L. Dalley. 1995. Nearshore distribution and abundance of juvenile Atlantic cod (Gadus morhua) at two sites in coastal waters of Newfoundland. DFO Research Document 95/90.
F 92	Bakanev, V.S. and V.A. Ermolchev. 1982. Hydroacoustic assessment of capelin abundance in NAFO Division 3LNO in May-June 1981.NAFO SCR Doc. 82/VI/61.
F 93	Boyar, H.C., R.R. Marak, F.E. Perkins and R.A. Clifford. 1973. Seasonal distribution and growth of larval herring (Clupea harengus L.) in the Georges Bank-Gulf of Maine area from 1962 to 1970. J. Cons. Int. Explor. Mer., 35(1): 36-51.
F 94	Brander, K. 1993. Comparison of spawning characteristics of cod (Gadus morhua) stocks in the North Atlantic. NAFO Sci. Coun. Studies 18: 13-20.
F 95	Buckley, L.J., E.C. Caldarone, R.G. Lough, J. St. Onge-Burns and T.L. Ong. 2000. Patterns in growth of Atlantic cod (Gadus morhua) and haddock (Melanogrammus aeglefinus) larvae on Georges Bank. ICES CM M:03.
F 96	Colton, J.B. Jr. 1965. The distribution and behaviour of pelagic and early demersal stages of haddock in relation to sampling techniques. ICNAF Environmental Symposium Spec. Publication No. 6: 317-333.
F 97	Dawe, E.G. and L.C. Hendrickson. 1998. A review of the biology, population dynamics, and exploitation of short-finned squid in the Northwest Atlantic Ocean, in relation to assessment and management of the resource.NAFO SCR Doc 98/59.
F 98	Drinkwater, K., S. Lochman, C. Taggart, K. Thompson and K. Frank. 2000. Entrainment of redfish (Sebastes spp larvae off the Scotian Shelf. ICES J. Mar. Sci. 57: 372-382.
F 99	Grall, C. and D.P. de Sylva. 1981. Distribution and seasonality of Broadbill swordfish (Xiphias gladius) larvae, particularly in the Western North Atlantic ocean. ICES CM H:33.
F100	Grimes, B.H., M.T. Huish and J. H. Kerby. 1989. Species Profiles: life histories and environmental requirements of coastal fishes and invertebrates (Mid-Atlantic). Biological Report 82(11.112), TR EL-82-4. US Dept. Interior, Fish and Wildlife Serv., National Wildlife Research Center, Washington, D.C.
F101	Hanke, A.R., F.H. Page, and J. Neilson. 2001a. Distribution of pollock (Pollachius virens) eggs and larvae on the Scotian Shelf, eastern Gulf of Maine, Bay of Fundy and eastern Georges Bank. Can. Tech. Rep. Fish. Aquat. Sci. 2345: iii+120p.
F102	Hanke, A.R., F.H. Page, and J. Neilson. 2001b. Distribution of haddock (Melanogrammus aeglefinus) eggs and larvae on the Scotian Shelf, eastern Gulf of Maine, Bay of Fundy and eastern Georges Bank. Can. Tech. Rep. Fish Aquat. Sci. 2329: iii+133p.
F103	Hanke, A.R., F.H. Page, and J. Neilson. 2000. Distribution of Atlantic cod (Gadus morhua) eggs and larvae on the Scotian Shelf. Can. Tech. Rep. Fish. Aquat. Sci. 2308: iii+140p.
F104	Miller, D., J.B. Colton Jr., and R.R. Marak. 1963. A study of the vertical distribution of larval haddock. J. Cons. Int. Exp. Mer. 28: 37-49.

Reference Number	Reference
F105	Bradford, R.G. and T.D. Iles. 1992. Retention of herring Clupea harengus larvae inside Minas Basin, inner Bay of Fundy. Can. J. Zool. 71: 56-63.
F106	Brickman, D., N.L. Shackell and K.T. Frank. 2001. Modelling the retention and survival of Browns Bank haddoc larvae using an early life stage model. Fish. Oceanogr. 10: 284-296.
F107	Dawe, E.G. and P.C. Beck. 1985. Distribution and size of short-finned squid (Illex illecebrosus) larvae in the Northwest Atlantic from winter surveys in 1969, 1981 and 1982. J. Northw. Atl. Fish. Sci. 6: 43-55.
F108	Dupuis, H.M.C., S.C. Courtenay and E.M.P. Chadwick. 1997. Distribution of juvenile Atlantic herring in the southern Gulf of St. Lawrence. Can. Tech. Rep. Fish. Aquat. Sci. 2141: 19p.
F109	Gagne, J.A. and R.N. O'Boyle. 1984. The timing of cod spawning on the Scotian Shelf. In: E. Dahl. D.S. Danielssen, E. Moksness and P. Solemdal (eds), The Propagation of Cod Gadus morhua L.. Flodevigen rapportser 1: 501-517
F110	Iles, T.D. and M. Sinclair. 1982. Atlantic herring: stock discreteness and abundance. Science 215:627-633.
F111	Jeffrey, J.A. and C. T. Taggart. 2000. Growth variation and water mass associations of larval silver hake (Merluccius bilinearis) on the Scotian Shelf. Can. J. Fish. Aquat. Sci. 57: 1728-1738.
F112	Lochmann, S.E., C.T. Taggart, D.A. Griffin, K.R. Thompson and G.L. Maillet. 1997. Abundance and condition o larval cod (Gadus morhua) at a convergent front on Western Bank, Scotian Shelf. Can. J. Fish. Aquat. Sci. 54: 1461-1479.
F113	Miller, T.J., T. Herra and W.C. Leggett. 1995. An individual-based analysis of the variability of eggs and their newly hatched larvae of Atlantic cod (Gadus morhua) on the Scotian Shelf. Can. J. Fish. Aquat. Sci. 52: 1083-1093.
F114	Penny, R. 1987. Development of deep-water redfish (Sebastes mentella) larvae, with comparative notes on newly extruded Acadian redfish (Sebastes fasciatus) from the Flemish Cap. Can. J. Zool. 65: 1167-1180.
F115	Perry, R.I. and J.D. Neilson. 1988. Vertical distributions and trophic interactions of age-0 Atlantic cod and haddock in mixed and stratified waters of Georges Bank. Mar. Ecol. Prog.Ser. 49: 199-214.
F116	Sherman, K. 1980. MARMAP, a fisheries ecosystem study in the Northwest Atlantic: fluctuations in ichthyoplankton-zooplankton components and their potential for impact on the system. In, Diemer, F.P., F.J. Verberg and D.Z. Mirkes, Eds. Advanced Concepts in Ocean Measurements for Marine Biology. Belle Baruch Library in Marine Science No. 10. U. of South Carolina Press, Columbia, S.C.
F117	Sherman, K., W. Smith, W. Morse, M. Berman, J. Green and L. Ejsymont. 1984. Spawning strategies of fishes in relation to circulation, phytoplankton production, and pulses in zooplankton off the northeastern United States. Mar. Ecol. Prog. Ser. 18: 1-19.
F118	Smith, W.G., P. Berrien, D.G. McMillan and A. Wells. 1981. The distribution, abudance and production of Atlantic cod and haddock larvae off Northeastern United States in 1978-79 and 1979-80. ICES CM: G52.
F119	Smith, T.I.F. and J. P. Clugston. 1997. Status and management of Atlantic sturgeon, Acipenser oxyrinchus, in North America. Environmental Biology of Fishes, 48: 335-346.
F120	Smith, W.G., M. Pennington, P. Berrien, J. Sibunka, M. Konieczna, M. Baranowski, and E. Meller.1979. Annual changes in the distribution and abundance of Atlantic cod and haddock larvae off the Northeastern United States between 1973-74 and 1977-78. ICES CM G: 47
F121	Myers, R.A., G. Mertz and C.A. Bishop. 1993. Cod spawning in relation to physical and biological cycles of the northern Northwest Atlantic. NAFO SCR Doc. 93/39.

Reference Number	Reference
F122	Suthers, I.M., K.T. Frank and S.E. Campana. 1989. Spatial comparison of recent growth in postlarval Atlantic coc (Gadus morhua) off southwestern Nova Scotia: inferior growth in a presumed nursery area. Can. J. Fish. Aquat. Sci. 46(Suppl. 1): 113-124.
F123	Suthers, I.M. and K.T. Frank. 1989. Inter-annual distributions of larval and pelagic juvenile cod (Gadus morhua) in Southwestern Nova Scotia determined with two different gear types. Can. J. Fish. Aquat. Sci. 46: 591-602.
F124	Templeman, W. 1986. Some biological aspects of Atlantic wolffish (Anarhichas lupus) in the Northwest Atlantic. J. Northw. Atl. Fish. Sci. 7: 57-65.
F125	Townsend, D.W. and N.R. Pettigrew. 1996. The role of frontal currents in larval fish transport on Georges Bank. Deep-Sea Research II, 43(7-8): 1773-1792.
F126	Van Guelpen, L. 1986. Hookear sculpins (genus Artediellus) of the North American Atlantic: taxonomy, morphological variability, distribution, and aspects of life history. Can. J. Zool. 64: 677-690.
F127	Waiwood, K.G. and M.-I. Buzeta. 1989. Reproductive biology of Southwest Scotian Shelf haddock (Melanogrammus aeglefinus). Can. J. Fish. Aquat. Sci. 46(Suppl. 1): 153-170.
F128	Walsh, S.J. 1994. Life history traits and spawning characteristics in populations of long rough dab (American plaice) Hippoglossoides platessoides) (Fabricius) in the North Atlantic. Netherlands Journal of Sea Research 32: 241-254.
F129	Werner, F.E., R.I. Perry, R.G. Lough and C.E. Naimie. 1996. Trophodynamic and advective influences on Georges Bank larval cod and haddock. Deep-Sea Research II, 43: 1793-1822.
F130	Hatanaka, H., T. Kawakami, E. Fujii, K. Tamai, T. Amaratunga, J. Young, D. Chaisson, T. McLane, A. Lange, L. Palmer, J. Prezioso and M. Sweeney. 1982. Aspects on the spawning season, distribution and migration of Short-finned Squid (Illex illecebrosus) in larval and juvenile stages in the Northwest Atlantic. NAFO SCR Doc. 82/VI/32. Serial No. N520. 32 p.
F131	Hatanaka, H., A.M.T. Lange and T. Amaratunga. 1984.Geographical and vertical distribution of larval stage short finned squid (Illex illecebrosus) in the Northwest Atlantic. NAFO SCR Doc. 84/IX/123. Serial No. N922. 16 p.
F132	Locke, A. 2002. The ichthyoplankton and invertebrate zooplankton of the coastal waters of Cape Breton Island: A Review. Can. Manuscr. Rept. Fish. Aquat. Sci. 2606: iv + 24 pp.
F133	Melvin, G.D. and F.J. Fife. 1993. Report on the 1992 Survey of Georges Bank using Commercial Herring Seiners. DFO Atlantic Fisheries Research Document 93/73. 16 p.
F134	Sherman, K., C. Jones, L. Sullivan, W. Smith, P. Berrien and L. Ejsymont. 1981. Congruent shifts in sand eel abundance in western and eastern North Atlantic ecosystems. Nature, 291: 486-489.
F135	Markle, G.E. 1974. Distribution of larval swordfish in the Northwest Atlantic Ocean. Pages 252-260, In, R.S. Shomura and F. Williams (eds), Proc. Int. Billfish Symp., 9-12 Aug. 1972, Hawaii. Part 2. Review and Contributed Papers. US Dept. Comm., NOAA Tech. Rep. NMFS SSRF-675.
F136	Pitt, T.K. 1970. Distribution, abundance, and spawning of yellowtail flounder, Limanda ferruginea, in the Newfoundland area of the Northwest Atlantic. J. Fish. Res. Bd. Canada 27: 2261-2271.
F137	Polacheck, T., D. Mountain, D. McMillan, W. Smith and P. Berrien. 1992. Recruitment of the 1987 year class of Georges Bank haddock (Melanogrammus aeglefinus): the influence of unusual larval transport. Can. J. Fish. Aquat. Sci. 49: 484-496.
F138	Reiss, C.S., A. Anis, C.T. Taggart, J.F. Dower and B. Ruddick. 2002. Relationships among vertically structured in situ measures of turbulence, larval fish abundance and feeding success and copepods on Western Bank, Scotian Shelf. Fish.Oceanogr.11:156-174.

Reference Number	Reference
F139	Rikhter, V.A., I.K. Sigaev, V.A. Vinogradov and V.I. Isakov. 2001. Silver hake of Scotian Shelf: Fishery, environmental conditions, distribution, and biology and abundance dynamics. J. Northw. Atl. Fish. Sci. 29: 51-92.
F140	Ruzzante, D.E., C.T. Taggart and D. Cook. 1996. Spatial and temporal variation in the genetic composition of a larval cod (Gadus morhua) aggregation: cohort contribution and genetic stability. Can. J. Fish. Aquat. Sci. 53: 2695-2705.
F141	Morse, W. 1982. Spawning stock biomass estimates of sand lance, Ammodytes sp., off northeastern United States, determined from MARMAP plankton surveys, 1974-1980. ICES C.M. 1982/G:39. 11 p.
F142	Sameoto, D.D. 1972. Distribution of herring (Clupea harengus) larvae along the southern coast of Nova Scotia with observations on their growth and condition factor. J. Fish. Res. Bd. Canada 29: 507-515.
F143	Scott, J.S. 1980. Occurrence of Pollock, Pollachius virens, and Sand Lance, Ammodytes sp., Larvae in the Bay of Fundy. J. Northw. Atl. Fish. Sci. 1: 45-48.
F144	Scott, J.S. 1972. Eggs and larvae of northern sand lance (Ammodytes dubius) from the Scotian Shelf. J. Fish. Res. Bd. Canada 29: 1667-1678.
F145	Noskov, A.S., A.I. Sherstiukov and A.N. Romanchenko. 1979. Distribution and abundance of silver hake eggs, larvae, and juveniles, and environmental conditions off the Nova Scotia shelf in August-October 1978. ICNAF Res. Doc. 79/VI/100.
F146	Page, F.H., R. Losier and P. Berrien. 1997. Spawning time of haddock and cod on Georges Bank as indicated by the MARMAP icthyoplankton data set. Canadian Stock Assessment Secretariat Research document 97/130.
F147	Smith, W.G., D.G. McMillan and A. Wells. 1980. The distribution and abundance of Atlantic herring larvae in th Gulf of Maine region as determined from MARMAP surveys, 1977-80. NAFO SCR Doc. 80/IX/146.
F148	Smith, W.G., D.G. McMillan and A. Wells. 1981. The distribution and abundance of Atlantic herring larvae in th Gulf of Maine region as determined from MARMAP surveys during autumn and winter, 1980-81. NAFO SCR Doc. 81/IX/115.
F149	Sullivan, L. 1980. Distribution, abundance and mortality estimates of larval butterfish, Peprilus triacanthus, from MARMAP surveys, 1977 and 1978. ICES CM G:18.
F150	Berrien, P. and J. Sibunka. 1999. Distribution patterns of fish eggs in the U.S. northeast continental shelf ecosystem, 1977-1987. U.S. Dep. Commer., NOAA Tech. Rep. NMFS 145, 310p.
F151	Sherman, K., W. G. Smith, K. R. Green, E. B. Cohen, M. S. Berman, K.A. Marti and J.R. Goulet. 1987. Zooplankton production and the fisheries of the Northeastern shelf. Chapter 25: 286-282. In, Backus, R.H. and D.W. Bourne, eds. Georges Bank. MIT Press, Cambridge, Massachussetts, 593 p.
F152	Sibunka, J.D. and M.J. Silverman. 1989. MARMAP Surveys of the continental shelf from Cape Hatteras, North Carolina, to Cape Sable, Nova Scotia (1984-87) Atlas No. 3 Summary of Operations. NOAA Technical Memorandum NMFS-F/NEC-68. 197pp
F153	Sibunka, J.D. and M.J. Silverman. 1984. MARMAP Surveys of the continental shelf from Cape Hatteras, North Carolina, to Cape Sable, Nova Scotia (1984-87) Atlas No. 1 Summary of Operations. NOAA Technical Memorandum NMFS-F/NEC-33. 306 pp.
F154	Burke, D.L., R.N. O'Boyle, P. Partington and M. Sinclair. 1996. Summary and discussion of the papers on groundfish management. In, Burke, D.L, R.N. O'Boyle, P. Partington and M. Sinclair eds., Report of the second workshop on Scotia-Fundy groundfish management. Can. Tech. Rep. Fish. Aquat. Sci. 2100, 1996: vii + 247 p.
F155	Sinclair, M. 1996. Biological concepts of importance in considering closed areas as a tactic. Pages 125-128, In, Burke, D.L, R.N. O'Boyle, P. Partington and M. Sinclair, eds. Report of the second workshop on Scotia-Fundy groundfish management. Can. Tech. Rep. Fish. Aquat. Sci. 2100: vii + 247 p.

Reference Number	Reference
F156	Neilson, J.D. and P. Perley. 1996. Can ichthyoplankton data be used to describe spawning areas of marine fish? In Burke, D.L, R.N. O'Boyle, P. Partington and M. Sinclair, Eds., Report of the second workshop on Scotia-Fundy groundfish management. Can. Tech. Rep. Fish. Aquat. Sci. 2100: vii +247p.
F157	Younger, A., K. Kealey, M. Sinclair and E. Trippel. 1996. Fisheries knowledge of spawning locations on the Scotian Shelf. In, Burke, D.L., R.N. O'Boyle, P. Partington and M. Sinclair, eds. Report of the second workshop on Scotia-Fundy Groundfish Management. Can. Tech. Rep. Fish. Aquat. Sci. 2100: vii + 247 p.
F158	Serebryakov, V.P. 1962. Studies of ichthyoplankton in the areas of Newfoundland and Labrador. Pages 221-227, In, Y.Y. Marti (editor), Soviet Fisheries Investigations in the Northwest Atlantic, VNIRO, Moscow and PINRO, Murmansk, USSR. Israel Program for Scientific Translations, Jerusalem.
F159	Bonnyman, S. 1981. Section VI, Icthyoplankton of the Grand banks of Newfoundland. Grand Banks Oceanographic Studies, Volume 2. Final report, Mobil Oil Canada Limited.
F160	Anderson, J.T. 1984. Early life history of redfish (Sebastes spp.) on Flemish Cap. Can. J. Fish. Aquat. Sci. 71: 1106-1116.
F161	Cohen, E.B., J.R. Green, D.C. Potter and B.P. Hayden. 1985. Some preliminary results of juvenile cod and haddock studies on Georges Bank in 1984 and 1985. I.C.E.S. CM G74: 23.
F162	Das, N. 1968. Spawning, distribution, survival, and growth of larval herring (Clupea harengus L.) in relation to hydrographic conditions in the Bay of Fundy. Tech. Rep. Fish. Res. Bd. Can. 88: 129 p.
F163	McLaren, I.A. and P. Avendano. 1995. Prey field and diet of larval cod on Western Bank, Scotian Shelf. Can. J. Fish. Aquat. Sci. 52: 448-463.
F164	Carscadden, J.E., K.T. Frank and D.S. Miller. 1989. Capelin (Mallotus villosus) spawning on the southeast shoal: influence of physical factors past and present. Can. J. Fish. Aquat. Sci. 46: 1743-1754.
F165	Noskov, A.S., V.P. Karaulovsky, A.N. Romanchenko and A.I. Sherstiukov. 1978. Distribution and abundance of silver hake eggs and larvae and environmental conditions off Nova Scotia in September-October 1977. ICNAF Res. Doc. 78/VI/32, Ser. No. 5193.
F166	Pitt, T.K. 1966. Sexual maturity and spawning of the American plaice, Hippoglossoides platessoides (Fabricius), from Newfoundland and the Grand Bank areas. J. Fish. Res. Bd. Canada, 23: 651-672.
F167	Powles, P.M. 1967. Atlantic wolffish (Anarhichas lupus L.) eggs off southern Nova Scotia. J. Fish. Res. Bd. Can. 24: 207-208.
F168	Powles, P.M. 1965. Life history and ecology of American plaice (Hippoglossoides platessoides F.) in the Magdalen Shallows. J. Fish. Res. Bd. Canada, 22: 565-598.
F169	Sameoto, D. and N. Cochrane. 1996. Euphausiids on the Eastern Continental Shelf. DFO Atlantic Fisheries Research Document 96/119.
F170	Scott, D.M. 1954. A comparative study of the yellowtail flounder from three Atlantic fishing areas. J. Fish. Res. Bd. Canada, 11:171-197.
F171	Shackell, N.L., K.T. Frank, B. Petrie, D. Brickman and J. Shore. 1999. Dispersal of early life stage haddock Melanogrammus aeglefinus as inferred from the spatial distribution and variability in length-at-age of juveniles. Can. J. Fish. Aquat. Sci. 56: 1-12.
F172	Tibbo, S.N., and J.E.H. Legare. 1960. Further study of larval herring (Clupea harengus L.) in the Bay of Fundy and Gulf of Maine. J. Fish. Res. Bd. Can. 17: 933-942.
F173	Tibbo, S.N., J.E.H. Legare, L.W. Scattergood and R.F. Temple. 1958. On the occurrence and distribution of larva herring (Clupea harengus L.) in the Bay of Fundy and the Gulf of Maine. J. Fish. Res. Bd. Canada 15(6): 1451-1469.

Reference Number	Reference
F174	Colton, J.B. Jr., and R.R. Byron. 1977. Gulf of Maine-Georges Bank ichthyoplankton collected on ICNAF larval herring surveys September 1971-February 1975. U.S. Dep. Comm. NOAA Tech. Rep. NMFS Spec. Sci. Rep.-Fish. 717: 1-35.
F175	Lough, R.G., G.R. Bolz, M. Pennington and M.D. Grosslein. 1982. Larval abundance and mortality of Atlantic herring (Clupea harengus L.) spawned in the Georges Bank and Nantucket Shoals areas, 1971-78 seasons, in relation to spawning stock size. J. Northw. Atl. Fish. Sci. 6: 21-35.
F176	Marak, R.R. and R. Livingstone, Jr. 1970. Spawning dates of Georges Bank haddock. ICNAF Res. Bull., 7: 56-58.
F177	Musick, J.A. 1974. Seasonal distribution of sibling hakes, Urophycis chuss and U. tenuis (Pisces, gadidae) in New England. Fishery Bulletin, 72 (2): 481-495.
F178	Smith, W.G. D.G. McMillan, C. Obenchain, P. Rosenberg, A. Wells, M. Silverman, E. Baranowski and M. Adamus. 1980. Spawning cycles of marine fishes off northeastern United States based on broadscale surveys of eggs and larvae, 1977-79. ICES C.M. 1980/L:66.
F179	Evseenko, S.A. and M.M. Nevinsky. 1975. Spawning and development of witch flounder, Glyptocephalus cynoglossus L., in the Northwest Atlantic. ICNAF Res. Bull. No. 11: 111-123.
F180	Serebryakov, V.P. 1965. Some results of Soviet research work on ichthyoplankton in the Northwest Atlantic. Eggs and larvae of cod. Spec. Publ. Int. Comm. Northwest Atlant. Fish. 6:425-433.
F181	Messieh, S., R. Pottle, P. MacPherson and T. Hurlbut. 1985. Spawning and exploitation of Atlantic herring (Clupea harengus) at Escuminac in the Southwestern Gulf of St. Lawrence, Spring 1983. J. Northw. Atl. Fish. Sci 6: 125-133.
F182	Stephenson, R.L., D.E. Lane, D.G. Aldous and R. Nowak. 1993. Management of the 4WX Atlantic herring (Clupea harengus) fishery: an evaluation of recent events. Can. J. Fish. Aquat. Sci. 50: 2742-2757.
F183	Stewart, P.L., R. M. Branton, J. Black, H.A. Levy and T.L. Robinson. 2003. EAISSNA--Electronic Atlas of Ichthyoplankton for the Scotian Shelf of North America. Report to Environmental Studies Research Funds, November 2003.
F184	Department of Fisheries and Oceans. 1980. Canadian Atlantic Offshore Fishery Atlas. Can. Spec. Publ. Fish. Aquat. Sci. 47. 89 p.
F185	Brickman, D. and K.T. Frank. 2000. Modelling the dispersal and mortality of Browns Bank egg and larval haddock (Melanogrammus aeglefinus). Can. J. Fish. Aquat. Sci. 57: 2519-2535.
F186	Department of Fisheries and Oceans. 2002. Updates on selected Scotian Shelf groundfish stocks in 2001. DFO Science Stock Status Report A3-35(2001).
F187	Dannevig, A. 1919. Canadian fish-eggs and larvae. Biology of Atlantic waters of Canada. Canadian Fisheries Expedition, 1914-15.
F188	Scott, J.S. 1983. Inferred spawning areas and seasons of groundfishes on the Scotian Shelf. Can. Tech. Rep. Fish. Aquat. Sci. 1219: iii + 14 p.
F189	Colton, J.B., Jr. and J.M. St. Onge. 1974. Distribution of fish eggs and larvae in continental shelf waters, Nova Scotia to Long Island. Ser. Atlas Mar. Environ., American Geographic Society. Folio 23.
F190	Oldham, W.S. 1972. Biology of Scotian Shelf Cusk, Brosme brosme. ICNAF Res. Bull. 9: 85-98.
F191	Bainbridge, V. and G.A. Cooper. 1971. Populations of Sebastes larvae in the North Atlantic. ICNAF Res. Bull. 8: 27-35.
F192	Caddy, J.F. and T.D. Iles. 1973. Underwater observations on herring spawning grounds on Georges Bank. Int. Coun. NW Atlantic Fisheries Res. Bull. 10: 131-139.

Reference Number	Reference
F193	McKenzie, R.A. 1940. Nova Scotian autumn cod spawning. J. Fish. Res. Bd. Can., 5: 105-120
F194	Lough, R.G., C.G. Hannah, P. Berrien, D. Brickman, J.W. Loder and J.A. Quinlan. 2002. Spawning pattern variability and its effect on retention, larval growth, and recruitment in Georges Bank cod and haddock. ICES C.M. 2002/p:15. 38 p.
F195	Fortier, L. and A. Villeneuve. 1996. Cannibalism and predation on fish larvae by larvae of Atlantic mackerel, Scomber scombrus: trophodynamics and potential impact on recruitment. Fishery Bull. 94: 268-281.
F196	Sherstyukov, A.I. 1991. On reproduction and formation of silver hake (Merluccius bilinearis) year-class strengths at early ontogenesis on the Scotian Shelf. NAFO SCR Document 91/19. 15 p.
F197	Stephenson, R.L., K.J. Clark, M.J. Power, F.J. Fife, and G.D. Melvin. 2001. Herring Stock Structure, Stock Discreteness and Biodiversity. In, F. Funk, J. Blackburn, D. Hay, A.J. Paul, R.L. Stephenson, R. Toreson, and P.N Witherell (eds.), Herring: Expectations for a New Millennium. Proceedings of the 18th Lowell Wakefield Fisherie Symposium. Alaska. University of Alaska Sea Grant, AK-SG-01-04, Fairbanks, Alaska.
F198	Stephenson, R.L., M.J. Power, J.B. Sochasky, W.H. Dougherty, F.J. Fife, G.D. Melvin and D.E. Lane. 1992. CAFSAC Res. Doc. 92/69. 51 p.

APPENDIX J — GEOGRAPHIC FEATURES ON THE EAST COAST OF NORTH AMERICA INCLUDING THOSE SEARCHABLE IN EAISSNA.

Appendix J - Geographic features on the east coast of North America including those searchable in EAISSNA.

Feature Number	Feature Name	General Area	Filename in EAISSNA
88	American Bank	Gulf of St. Lawrence	
80	Anticosti (Mingan) Channel	Gulf of St. Lawrence	
15	Artimon Bank	Scotian Shelf	Artimon Bank.png
58	Avalon Channel	Newfoundland Shelf	
104	Baccaro Bank	Scotian Shelf	Baccaro Bank.png
26	Banquereau Bank	Scotian Shelf	Banquereau Bank.png
85	Bay of Chaleur	Gulf of St. Lawrence	
119	Bay of Fundy	Scotian Shelf	Bay of Fundy.png
90	Beauge Bank	Gulf of St. Lawrence	
73	Belle Isle Bank	Newfoundland Shelf	
89	Bennett Bank	Gulf of St. Lawrence	
67	Bonavista Shelf	Newfoundland Shelf	
82	Bradelle Bank	Gulf of St. Lawrence	
6	Bras d'Or Lakes	Cape Breton Island	Bras d'Or Lakes.png
22	Browns Bank	Scotian Shelf	Browns Bank.png
51	Burgeo Bank	Newfoundland Shelf	Burgeo Bank.png
45	Buzzards Bay	US Northeast Atlantic Shelf	
59	Cabot Strait	Newfoundland Shelf	
12	Canso Bank	Scotian Shelf	Canso Bank.png
47	Canso Strait	Scotian Shelf	
44	Cape Cod Bay	US Northeast Atlantic Shelf	
86	Cape Whittle Bank	Gulf of St. Lawrence	
46	Chedabucto Bay	Scotian Shelf	
3	Chignecto Bay	Bay of Fundy	Chignecto Bay.png
99	Crowell Basin	Gulf of Maine	
107	Curdo Bank	Scotian Shelf	
28	Dawson Canyon	Scotian Shelf	
124	Eastern Scotian Shelf	Scotian Shelf	Scotian Shelf Eastern.png
106	Eastern Shoal-Banquereau	Scotian Shelf	
61	Eastern Shoal-Grand Bank	Newfoundland Shelf	
24	Emerald Bank	Scotian Shelf	Emerald Bank.png
19	Emerald Basin	Scotian Shelf	Emerald Basin.png
79	Esquiman Channel	Gulf of St. Lawrence	
110	Fishermans Bank	Gulf of St. Lawrence	
66	Flemish Cap	Newfoundland Shelf	

Feature Number	Feature Name	General Area	Filename in EAISSNA
65	Flemish Channel	Newfoundland Shelf	
68	Funk Island Bank	Newfoundland Shelf	
116	Gaspe Current	Gulf of St. Lawrence	
21	Georges Bank	US Northeast Atlantic Shelf	Georges Bank.png
17	Georges Basin	Gulf of Maine	Georges Basin.png
117	German Bank	Scotian Shelf	German Bank.png
7	Grand Manan Bank	Gulf of Maine	Grand Manan Bank.png
97	Grand Manan Banks	Gulf of Maine	Grand Manan Banks.png
94	Grand Manan Basin	Gulf of Maine	Grand Manan Basin.png
92	Grand Manan Channel	Bay of Fundy	
37	Great South Channel	US Northeast Atlantic Shelf	
56	Green Bank	Newfoundland Shelf	
69	Grey Island Shelf	Newfoundland Shelf	
112	Gulf of Maine	Gulf of Maine	Gulf of Maine.png
55	Haddock Channel	Newfoundland Shelf	
32	Haldimand Canyon	Scotian Shelf	
57	Halibut Channel	Newfoundland Shelf	
75	Hamilton Bank	Labrador Shelf	
60	Hermitage Channel	Newfoundland Shelf	
76	Hopedale Channel	Labrador Shelf	
122	Inner Bay of Fundy	Scotian Shelf	Inner Bay of Fundy.png
39	Jeffreys Ledge	Gulf of Maine	
16	Jordan Basin	Gulf of Maine	Jordan Basin.png
23	LaHave Bank	Scotian Shelf	LaHave Bank.png
18	LaHave Basin	Scotian Shelf	LaHave Basin.png
33	Laurentian Channel	Scotian Shelf	Laurentian Channel.png
100	Little Lurcher	Gulf of Maine	
29	Logan Canyon	Scotian Shelf	
43	Long Island Sound	US Northeast Atlantic Shelf	
114	Lower St. Lawrence Estuary	Gulf of St. Lawrence	
101	Lurcher Shoal	Gulf of Maine	Lurcher Shoal.png
10	MacKenzie Spot	Scotian Shelf	MacKenzie Spot.png
81	Magdalen Shallows	Gulf of St. Lawrence	
91	Mecatina Trough	Gulf of St. Lawrence	
113	Mid Atlantic Bight	US Northeast Atlantic Shelf	Mid Atlantic Bight.png
11	Middle Bank	Scotian Shelf	Middle Bank.png
121	Middle Bay of Fundy	Scotian Shelf	Middle Bay of Fundy.png

Feature Number	Feature Name	General Area	Filename in EAISSNA
2	Minas Basin	Bay of Fundy	Minas Basin.png
13	Misaine Bank	Scotian Shelf	Misaine Bank.png
77	Nain Bank	Labrador Shelf	
38	Nantucket Shoals	US Northeast Atlantic Shelf	
42	New York Bight	US Northeast Atlantic Shelf	
95	Northeast Bank	Gulf of Maine	
34	Northeast Channel	Scotian Shelf	Northeast Channel.png
74	Northeast Newfoundland Shelf	Newfoundland Shelf	
4	Northumberland Strait	Gulf of St. Lawrence	
115	Northwestern Gulf of St. Lawrence	Gulf of St. Lawrence	
83	Orphan Bank	Gulf of St. Lawrence	
120	Outer Bay of Fundy	Scotian Shelf	Outer Bay of Fundy.png
93	Owen Basin	Bay of Fundy	
125	Passamaquoddy Bay	Bay of Fundy	Passamaquoddy Bay.png
87	Pieter Bank	Gulf of St. Lawrence	
40	Rodgers Basin	Gulf of Maine	Rodgers Basin.png
8	Roseway Bank	Scotian Shelf	Roseway Bank.png
25	Sable Island Bank	Scotian Shelf	Sable Island Bank.png
9	Sambro Bank	Scotian Shelf	Sambro Bank.png
108	Scaterie Bank	Scotian Shelf	Scaterie Bank.png
27	Scotian Shelf	Scotian Shelf	Scotian Shelf.png
36	Scotian Slope	Scotian Shelf	
103	Sewell Ridge	Gulf of Maine	
31	Shortland Canyon	Scotian Shelf	
62	Southeast Shoal-Grand Bank	Newfoundland Shelf	
111	Southern New England continental shelf	Northeastern New England continental shelf	S_New England shelf.png
96	Southwest Bank	Gulf of Maine	
126	Southwest Nova Scotia Shelf	Scotian Shelf	Southwest Nova Scotia Shelf.png
118	St. Anns Bank	Scotian Shelf	St. Anns Bank.png
20	St. Anns Basin	Scotian Shelf	St. Anns Basin.png
72	St. Anthony Deep	Newfoundland Shelf	
71	St. Anthony Shelf	Newfoundland Shelf	
109	St. Georges Bay	Gulf of St. Lawrence	
102	St. Marys Bay	Bay of Fundy	St. Marys Bay.png
50	St. Pierre Bank	Newfoundland Shelf	
52	St. Pierre Channel	Newfoundland Shelf	
41	Stellwagen Bank	Gulf of Maine	

Feature Number	Feature Name	General Area	Filename in EAISSNA
78	Strait of Belle Isle	Gulf of St. Lawrence	
5	Sydney Bight	Scotian Shelf	Sydney Bight.png
63	Tail of Grand Bank	Newfoundland Shelf	
30	The Gully	Scotian Shelf	The Gully.png
105	The Patch	Scotian Shelf	
98	Truxton Swell	Gulf of Maine	
48	Western Bank	Scotian Shelf	Western Bank.png
49	Western Gully	Scotian Shelf	
123	Western Scotian Shelf	Scotian Shelf	Scotian Shelf Western.png
54	Whale Bank	Newfoundland Shelf	
53	Whale Deep	Newfoundland Shelf	
70	White Bay	Newfoundland Shelf	
35	Wilkinson Basin	Gulf of Maine	
64	Woolfall Bank	Newfoundland Shelf	